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ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN AND
RELATED MATTERS.

Hearing held
8th floor
180 Dundas Street West
Toronto, Ontario

Raw
X: Scott
X: Ortved

The Honourable Mr. Justice S.G.M. Grange

Commissioner

P.S.A. Lamek, Q.C.

Counsel

E.A. Cronk

Associate Counsel

Thomas Millar

Administrator

Transcript of evidence
for

August 18, 1983

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ROYAL COMMISSION OF INQUIRY INTO CERTAIN
DEATHS AT THE HOSPITAL FOR SICK CHILDREN
AND RELATED MATTERS.

Hearing held on the 8th Floor,
180 Dundas Street West, Toronto,
Ontario, on Thursday the 18th
day of August, 1983.

- - - -

THE HONOURABLE MR. JUSTICE S.G.M. GRANGE - Commissioner
THOMAS MILLAR - Administrator
MURRAY R. ELLIOT - Registrar

- - - -

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	and 35 Registered Nurses at
	The Hospital for Sick Children

(Cont'd)



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1

---Discussion off the record.

2

A/BB/ak

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---Upon commencing at 10:00 a.m.

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THE COMMISSIONER: Yes.

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MR. PERCIVAL: Mr. Commissioner,
may I file a box of goodies in relation to this as
the next exhibit, in relation to the digoxin.

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I say for the record, Mr. Commissioner,
that on Monday, March 23rd, the year 1981 all digoxin
ampules, pills and elixir were seized by the
Hospital from all wards in the Hospital and replaced
by new products. The ampules, pills and elixir that
were taken from the various wards were retained by
the Hosiptal's Pharmacy Department and specific tests
were made within one month of all of the products
that was found in Wards 4A and 4B which were found
to be normal by the Centre of Forensic Sciences.

That product was retained by the
Pharmacy Department of the Hospital up until January
of this year, at which time they called on Sergeant
Tony Warr and said that they were running out of
room in the Pharmacy Department and as a result of that
the police officers went to the Pharmacy Department
and picked the product up.

I have available for filing 10 packages
of the pedicatric ampules, 10 packages of the adult
ampules, 10 bottles of the pediatric elixir and the
only pill form that we have, unfortunately, there is

1 2, 4, 6, 8 pills in a capsule of the type of pill
 2 form. Those are the only pills that were given to
 3 us from the Pharmacy Department.

4 The officers still have in their
 5 possession other of the elixir, the adult ampules and
 6 the pediatric ampules, but I thought this should be
 7 sufficient for your purposes.

8 THE COMMISSIONER: Yes, I would
 9 think at least.

10 MR. PERCIVAL: It's enough for all
 11 of us I guess.

12 THE COMMISSIONER: Yes.

13 MR. PERCIVAL: May I have that
 14 marked as the next exhibit.

15 THE COMMISSIONER: Yes, all right,
 16 Exhibit 131.

17 ---EXHIBIT NO. 131: 10 Boxes - Lanoxin (Adult)
 18 5 Ampoules Injection of Digoxin
 19 10 Boxes - Lanoxin - Digoxin
 20 Pediatric Elixir
 21 10 Boxes - Lanoxin - Digoxin -
 22 10 Ampoules - Pediatric
 23 1 Bottle - unmarked - containing
 24 8 pills (white)

25 THE COMMISSIONER: All right.
 Then, Mr. Strathy, you can of course have access to it.

MR. STRATHY: Thank you.

THE COMMISSIONER: All right, any-
 thing else anyone wants to say?

Yes, Mr. Scott?



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DR. RICHARD DESMOND ROWE, Resumed

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EXAMINATION BY MR. SCOTT: (Continued)

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Q. Doctor, when we finished last night you had produced Exhibit 129 which was your analysis paralleling the New England study of the deaths which are the subject of the inquiry which occurred between June 30th and the end of September, 1980 and I think I had completed dealing with that.

Just to get the matter in prespective however, can you give me the figure for the number of babies that went through Wards 4A and 4B in the epidemic period?

A. I can't give you a specific number but the annual number of patients on the ward is about 1100.

Q. I see. That would be in a 12-month period?

A. A 12-month period, yes.

Q. Would it be reasonable to assume that three-quarters of that would be the number in a 9-month period?

A. I would think so.

Q. Yes. So, you would have, let us say, between 800 and 950 or thereabouts patients in a period of 9 months?



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2

A. Yes, I think so.

3

4

5

Q. Yes. And because this is
a cardiology ward, I take it that a substantial
number of those patients would be on digoxin?

6

A. Yes.

7

8

Q. Yes. For either all or
part of their time in the Hospital ward.

9

A. Yes.

10

11

12

13

Q. Yes. And I take it also,
is it possible for you to give me a rough estimate
of the number of the proportion of patients in the
ward in the 9-month period who would be on digoxin
therapy at some time?

14

15

A. Well, I can't give you that
figure but it would be fairly high I would think.

16

17

Q. If we are dealing with let's
say 800 patients, would there be 500 on digoxin
therapy?

18

19

A. I can't really make a good
guess at that, Mr. Scott.

20

21

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Q. All right. Well, I take it
in cases where there is digoxin therapy there is
likely to be serum testing?

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A. Yes.

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Q. Can you tell me the number of



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serum tests that were done?

A. I think the number is somewhere in the order of 1500 during that period. I'm not sure whether they were all on the ward or some of them in the Intensive Unit.

Q. Yes. But during the epidemic period there would be about 1500 tests?

A. Yes. They may not all have been on the ward, they may have been in the neonatal floor too.

Q. Well, there is record of that in the Hospital somewhere?

A. Yes, Dr. Ellis would have that record.

Q. Well, we're talking in this case of about somewhere between 30 and 45 ante mortem serum tests in connection with our 36 patients.

A. I'm sorry?

Q. No, no. Well, it's an observation rather than a question. There are 36 patients with which we are concerned in this Inquiry.

A. Yes.

Q. Not all of them had pre-death serum samples taken.

A. No.



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Q. Some had one, some had more
than one.

4

A. Some had none.

5

Q. And some had none.

6

A. Yes.

7

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Q. So, we would be dealing with
let us say 50 serum tests more or less, would that
be fair?

9

10

MR. LAMEK: Mr. Commissioner, is
there any basis for that kind of comment, really?
Does it have any significance?

12

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MR. SCOTT: Well, what I'm trying
to establish, and perhaps it is so obvious it doesn't
need a question, is that of the 1500 serum tests
taken, we are focusing in this Inquiry on a relatively
small number of those tests.

17

Now, let me just leave it there. That
isn't a question that has to be answered.

18

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Q. What I want to ask you,
Dr. Rowe, is, would it come as any surprise to you
to know that among the other serum tests which are not
before the Commission done during the epidemic period
obviously on patients who lived, because we are
considering all the patients who died ---

24

25

THE COMMISSIONER: Well, the figure



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3 1500 serum tests of course doesn't involve anything
4 like 1500 patients, they involve something like 850,
5 or whatever that number is.

6 MR. SCOTT: That's correct.

7 THE COMMISSIONER: And probably less
8 than that.

9 MR. SCOTT: That's correct, sir.

10 THE COMMISSIONER: 5 or 6 hundred.

11 MR. SCOTT: What I'm asking Dr. Rowe,
12 and when my turn comes to call evidence, I may call
13 evidence about it, but what I'm asking him now is,
14 bearing in mind that there were taken some 1500 serum
15 tests in this period, many of which, the vast majority
16 of which do not concern 36 babies - are you with me
17 so far?

18 THE WITNESS: Yes, I am with you.

19 MR. SCOTT: Q. Would it surprise
20 you to know that many of those tests -- first of all,
21 I'm not being very good this morning, but first of
22 all those serum tests would have been taken on
23 babies who lived?

24 A. Yes.

25 Q. All right. Would it surprise
you to know that many of those tests revealed serum
levels that were above what we have been calling the



1

2

therapeutic norm?

3

A. There would be certainly some

4

I would think, yes.

5

Q. Yes. So, just so I get it

6

clear, it is not every test or, to put it this way,

7

it is not every baby who has a serum test that

8

produces a level above the so-called therapeutic

9

level who dies?

A. No.

10

Q. And is it your clinical

11

experience that there are many serum level tests

12

done producing readings above the therapeutic level

13

where the baby is entirely healthy and survives?

14

A. Yes, that's correct.

15

Q. Yes. Well, we'll come to a

16

study that talks about that in due course, but I just
wanted to get that perspective.

17

Now, you have dealt with the

18

September conferences. I want you now to, and I

19

think you have prepared at my request an exhibit

20

that deals with the deaths that occurred between the

21

end of September and the end of December, a number of

22

which were reviewed by your group in the January

23

meeting?

A. Yes.

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Q. Yes. Now, have you got that
in front of you?

A. I do.

Q. I have circulated these,
Mr. Commissioner. Perhaps Mr. Strathy can hand you
that.

THE COMMISSIONER: Yes, you didn't
know you were getting this extra job, Mr. Strathy.

Exhibit 132. How do you describe
it, Mr. Scott, what's its title?

MR. SCOTT: It is Consecutive Deaths
4A, 4B, for the period October 15, 1980 to December
24, 1980.

---EXHIBIT NO. 132: Consecutive Deaths 4A, 4B
for the period October 15,
1980 to December 24, 1980.

MR SCOTT: Q. I draw to your
attention that there were no deaths between October
1st and October 15th and none after December 24th
before January the 1st. So, it is really a three
month period listing all the deaths which Mr. Lamek
has told us concern us in that period.

Do I understand, Dr. Rowe, that this
chart has been prepared on the same basis as Exhibit
129?



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2

A. Yes, it has.

3

4

Q. So I don't have to go over
it, it is explanatory if we understand Exhibit 129.

5

6

I take it that at the bottom on page
2 there is a summary of the analysis and findings
that are reflected earlier in the chart?

7

8

A. Yes.

9

10

Q. What conclusions about
the severity of illness, size, failure to thrive and
risk do you draw from this analysis in relation to
those babies?

11

12

A. Well, I think the babies

13

involved all had severe malformations. They were
mostly very young babies. I think only one being
more than - or two being more than two months of age.

14

15

They had severe malformation by several different
classifications, or two different classifications

16

17

and their electrical mode of death was what one would
expect in those situations.

18

19

Q. Yes. What about the electrical

20

mode of death with respect to McKeil and Adamo? I
note you have observed fibrillation in those two
cases.

21

22

A. Yes. In McKeil at least

23

there was probably a stimulus defibrillation from
the presence of the myocardial necrosis, which is

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death of muscle cells prior to the actual event.

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Adamo just had a very complex lesion
and I can't remember whether there was anything
histologically there. I think since he didn't have
a post mortem we don't have information about whether
he had myocardial necrosis or not, but he had a very
complex lesion, so, it would be perhaps acceptable if
fibrillation was a factor.



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Q. Well now, you have told us that you were away for a large part of the autumn, I think, returning early in December.

Have I got that right?

A. Yes, that is correct.

Q. And I want to focus on what you would have known about these deaths at the end of December or early in January, as you were preparing for this conference that was held in late January and which succeeded the conference held in late September.

I take it that the first thing you would have observed is that you had statistically two deaths in the ward in October, one death in November and five deaths in December; is that right?

A. Yes.

Q. I'm sorry, six, I think, in December. I added that wrong. No, five.

THE COMMISSIONER: There are three in October, are there not?

MR. SCOTT: You are right. I am sorry. Three in October.

Three in October, one in November and five in December.

Q. Now, looking at it statistically and in terms of the pattern in the Hospital, just pretend that is the bar graph, for a moment, and



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comparing that with total cardiac deaths in the Hospital in 1980, in September there was something like thirteen; so that, in October, it was down to ten, and the ward figures were also down for that month, were they not?

A. Yes.

Q. When you come to November, it was down to, I think, eight, and the ward figures were correspondingly down in November.

A. Yes.

Q. In December, all cardiac deaths went up to eleven and the ward deaths went up.

A. Yes.

Q. Now, looking at it - and we don't have the graph here, but I have a copy of it - comparing the ward deaths with the ICU deaths --

THE COMMISSIONER: Which exhibit are you looking at?

MR. SCOTT: I am looking at the coloured exhibit, which is not here but I can show you a copy of it, Mr. Commissioner.

Perhaps I can put it up on here.

Q. Can you stand up here, Dr. Rowe. I want you to compare the yellow line, which is ICU deaths, with the blue line, which is your ward



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deaths.

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Beginning with September, your ward deaths are at about five and your ICU deaths are there. Then, in October, as we have seen, your ward deaths go down but the ICU deaths have gone up; haven't they?

A. Yes.

Q. In November, the ward deaths go down; the ICU deaths have come down but are still higher than they have been?

A. Yes.

Q. In December, ward deaths --

MR. MANNING: Excuse me, Mr. Commissioner, all I can hear back here is Mr. Scott; I can't hear Dr. Rowe. I understand he is trying to give the evidence anyway.

THE COMMISSIONER: I agree with everything you say. I can tell you the doctor is assenting from time to time, and I will let you know whether there is a change.

MR. MANNING: Thank you.

MR. SCOTT: Q. In December, the ward deaths appear to be up.

A. Yes.

Q. And the ICU deaths are up as well.



B4

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A. Yes.

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Q. Now, looking at that charting just as a statistical exercise, what conclusions, if any, can be drawn about the extent to which ward deaths appear to mimic or pattern deaths all cardiac or deaths ICU?

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A. I can't really comment on that. It is a very complex question about the relationship of deaths in one place versus another. I think that is the sort of situation that needs the expertise of the epidemiologists.

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Q. But would you agree with me that, from that chart, when it is proved, it appears that, in October, November and December, the ICU deaths go up when the ward deaths go up, and the ICU deaths come down when the ward deaths come down?

16

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A. I can see that.

Q. Yes. So, when you returned in December, in early January, that was sort of the statistical picture, and you have now given us this exhibit which is your analysis of these nine babies.

21

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25

I just want to ask you some questions about these particular cases.

MR. PERCIVAL: Mr. Commissioner, I haven't heard Dr. Rowe say he had all of the statistics



B5

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: back in December and January of 1981.

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MR. SCOTT: He may not have.

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MR. PERCIVAL: I know, but you
keep saying, well, you would have done this or you
would have done this, and I haven't heard that yet.

6

7

MR. SCOTT: I have not yet said,
you would have done anything.

8

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MR. PERCIVAL: The transcript
will say otherwise, with respect, Mr. Commissioner.

10

11

MR. SCOTT: What is the point my
friend wants to make?

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MR. PERCIVAL: Well, I would like
to end up hearing what the witness has to say; not
what Mr. Scott wishes to argue. It doesn't make
much difference if all that is going to be said is
what he would have done. Did he do it, that is surely
the matter.

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MR. SCOTT: All right.
Q. Dr. Rowe, when you came to
prepare for these two conferences in September and in
January, did you look at deaths globally in cardiology,
ICU and the wards?

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A. We looked at deaths in the
Intensive Care area --

Q. Yes.



B6

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A. -- the operating room --

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Q. Yes.

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A. -- the fourth floor and any-

5

thing that was transferred to those areas from outside.

6

Q. So, you wouldn't have had

7

such a handsome bar graph but you would have had

8

available at that time the substance of that material?

9

A. Well, we discussed all

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deaths in the 8.30 conference, so we have a rough

11

idea but we don't have specific moment-to-moment

12

figures on this.

13

Q. Well now, I hope my friends

don't object to my leading on this.

14

On the exhibit that you put

15

forward, would I be correct to have added up that four

16

of these babies were under thirty days old?

17

A. That was five.

18

Q. This is in Exhibit 132.

19

A. I think it is five. I make

five.

20

THE COMMISSIONER: Under what age?

21

MR. SCOTT: Under thirty days.

22

THE COMMISSIONER: I think the

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objection to you leading is I don't think it is

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correct, because there are five on the first page.

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MR. LAMEK: No, four on the first page.

THE COMMISSIONER: I am wrong, too, I guess. All right. Four on the first page and one on the second - five.

MR. SCOTT: Q. Can you tell me - I don't want to lead because it is getting near the end of the week and everybody is getting sensitive about it. Can you tell me - and I mustn't suggest an answer to you - from this chart how many babies appear to have been under thirty days of age?

A. Five.

Q. Can you tell me which they are?

A. Adamo, Lutes, Onofre, Gosselin and Lombardo.

Q. Now, can you tell me how many appear to be under two months?

A. There appear to be seven under two months.

Q. Now, I am going to take one very careful chance at leading and ask you if they would all be under six months? With my luck, it is going to turn out that one isn't!

A. They are all under six months.



B8

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Q. Can you tell me how many of
them were on dig. therapy?

3

4

I can suggest this answer to you
but I don't want to do that.

5

6

A. I haven't got that on that
chart and I can't remember offhand. I can find that
number for you.

7

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Q. Can you find it quickly?

9

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A. It would take me about five
minutes.

11

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THE COMMISSIONER: I take it you
can find it faster for him?

13

14

MR. SCOTT: Q. I think I can
tell you - I don't want to; my friends all get upset.

15

16

THE COMMISSIONER: I think you
know, and I will permit you to tell us.

17

18

MR. SCOTT: Q. My understanding
from the record is all these babies were on dig.
therapy except Lombardo and Belanger.

19

Am I right, Mr. Lamek?

20

MR. LAMEK: You are right, Mr.
Scott.

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MR. SCOTT: Q. All right. That
means seven of the nine were on dig. therapy at some
time. You will just have to accept that, Dr. Rowe. I



1
B9 2 think I can also tell you that all of them, when they
3 were on dig. therapy, were recorded as being reasonably
4 normal dosages; their dosages were not all the same
5 but they were recorded as being on reasonably normal
6 dosages, and I am sure Mr. Lamek would not disagree
7 with that.

8 MR. LAMEK: I am not qualified to
9 say that.

10 MR. SCOTT: Q. Now, I want to
11 give you the serum levels that were taken with
12 respect to these babies in the period.

13 Do you have the record somewhere
14 of the serum levels?

15 A. Yes, I do.

16 Q. I have McKeil at 4.7.

17 A. Greater than 4.7.

18 Q. Greater than 4.7?

19 A. Yes.

20 Q. Which way is that arrow
21 supposed to go?

22 A. Pointing towards the figure 4.

23 Q. Volk, 1.4.

24 A. I don't have that, but I can
25 check that.

Q. Lutes, at 2.1.



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A. I have one value of 2.8 for
Lutes.

Q. All right.

Onofre, at 1.1.

A. I can't find anything on
that.

Q. Let me leave you with
Onofre at 1.1. My research reveals that.

A. Yes.

Q. And Gosselin, at 3.7.

A. Yes.

Q. Are there any other serum
samples in this group, apart from the ones that I have
set out, of which you are now aware?

A. No.

Q. And, again, of course, no
post mortem levels were taking during this period?

A. No.

Q. And your Exhibit 132 illus-
trates that six of these went to autopsy.

A. Six went to autopsy.

Q. Now, two of the serum levels,
as I understand it - McKeil had greater than 4.7 and
Gosselin had 3.7 - appeared to be higher serum levels
than the manual might predict as therapeutic; is that



1
B11 2 right?

3 A. Yes.

4 Q. Now, leave McKeil and Gosselin
5 aside just for a moment. I want to ask you if there
6 was any evidence by early January in this period
7 upon which you could rely that pointed in any way to
8 digoxin toxicity as a cause of any deaths?

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A. No solid evidence in that direction. There was a question in some of the possible contribution towards the death but those were - that was McKeil I think.

Q. Leave McKeil and Gosselin out of it, and if you want to, we will take even a broader picture; leave out Gage in the previous period.

A. Yes.

MR. SCOTT: That is the one, Mr. Commissioner, where you pointed out correctly yesterday that the reading I think in Gage was 3.5.

Q. Leave out for the moment McKeil, Gage and Gosselin, and was there any evidence, looking back at the previous six months - I don't want to talk about now or March; I want to talk about early January - was there any evidence upon which you could rely that pointed to digoxin toxicity?

A. No. I don't believe so, no.

Q. Now we have before us at this Inquiry the records, and Mr. Lamek has taken you to a number of records such as Dr. Weber's note in the Woodcock case, such as a note on an electrocardiogram which had dig. question mark and he has taken you to the readings, and I just want to clear one matter.

At page 2618 Mr. Lamek asked you this



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question and you gave this answer.

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THE COMMISSIONER: What volume?

4

Excuse me; what volume?

5

MR. SCOTT: July 21st.

6

THE COMMISSIONER: Volume 15. Page?

7

MR. SCOTT: Page 2618.

8

Q. And Mr. Lamek there is moving

9

down to the January review and has been talking about

10

the 20 deaths that have occurred I think up until

11

the end of December (the same period that I am talking

12

about), and at line 10, Dr. Rowe, he asked this

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question, and if you will just listen to the question

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and the answer then I want to ask you something about

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it.

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"Doctor, we have gone through approxi-

17

mately 20 deaths in the course of the

18

last few days, and you have been

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patient with me, but in the latter

20

half of 1980, is it not fair to say

21

that a number of people involved in

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the Cardiology wards at one time or

23

another raised the question that one

24

or another of these deaths may have

25

resulted from, or may have exhibited

signs of digoxin intoxication.



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"Have we not seen that in the course
of the review of the deaths that we
have looked at?"

5

6

Now this is where I get my habit about leading
questions, of course. And your answer is:

7

"That has been raised, yes."

8

9

(Q.) But at least raised the
possibility of digoxin toxicity --

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Now, Dr. Rowe, we have the records
and they will speak for themselves; we have the
serum readings and they will speak for themselves.
Do you have any recollection apart from the record
and the readings of any person, doctor or nurse,
raising with you the question of these deaths
resulting from digoxin intoxication before the spring
of 1981?

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A. No, I do not.

22

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I should say that during the morning
conferences it is possible that there were comments
about the therapeutic dig. level but other than that,
no.

Q. All right.

THE COMMISSIONER: I wonder if I
could just clarify that. There were comments about



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therapeutic levels? You mean whether they exceeded them?

THE WITNESS: No, whether or not the level therapeutically might have had some contribution, played some part in the final events. But I think that can't be excluded in some of those levels that we have just recently talked about and I think I have said that before.

THE COMMISSIONER: There was some suggestion made that the therapeutic level (that is a proper level, apparently proper level) might have contributed to the deaths?

THE WITNESS: Yes. A high therapeutic level.

MR. SCOTT: Q. Now in the nine deaths on Exhibit 132, I am going to tell you and I think it can be proved elsewhere, that of the seven babies who died on that list who were on digoxin therapy, and I have excluded Lombardo and Adamo, three of the babies on digoxin therapy died during the day and four of the babies on digoxin therapy died during the night, and by the night I mean between 12 midnight and 6:00 a.m.

Q. Did you draw any conclusions from that in January, 1981 as you prepared for your



1
2 conference, apart from the kind of conclusions and
3 impressions that you discussed with me yesterday when
4 we were talking about September?

5 Did you see anything else in that
6 figure that alarmed you or upset you?

7 A. No.

8 Q. In looking at the matter as
9 at January, 1981, based on the information that was
10 available to you and the other cardiologists do you
11 see, and speaking only of what you knew then - don't
12 tell us about March - do you see anything that leads
13 you to review the conclusions you then drew about
the cause of death in these cases?

14 A. No.

15 Q. Was there anything in any
16 autopsy done before the end of December, 1980, that
17 caused you to alter or suggested the possibility of
18 altering the cause of death which you and the
19 cardiology team had assigned in the patients who
20 had died before the end of December, leaving aside
Woodcock?

21 A. Well, Woodcock is the only
22 one that I can recall where there was any change.

23 Q. Let me ask you: I have given
24 you the serum levels for the period where they existed
25



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2 for the period October 1st to December 31st. I have
3 read them out to you.

4 In your professional opinion based on
5 your clinical experience is there anything alarming or
6 concerning about those serum levels.

7 A. The only one would be the
8 question of McKeil whose value we can't say precisely
9 what it might have been.

10 Q. Apart from McKeil.

11 A. But the problem with McKeil
12 is that the level was obtained at a very - a relatively
13 short interval after the last dose was administered.

14 Q. We will be coming to McKeil, and
15 if you have a reservation about McKeil we will just
16 note it. Apart from McKeil were there any serum
17 levels that caused you as an experienced clinician
18 to feel concern about digoxin as a cause of these
19 deaths?

20 A. No, I don't think so.

21 Q. All right.

22 A. The levels for Gage and
23 'Gosselin though higher than the manual is not
24 alarming to me given the state of the babies and
25 the fact that digoxin was withheld.

Q. Now I take it that the action



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of digoxin in the body, its precise pharmacological
action, is a matter for a pharmacologist?

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A. I believe that is true.

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Q. But that a cardiologist has
to know something about the bottom line; that is,
how it operates?

7

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A. Yes.

9

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Q. But the scientific under-
standing of its properties and its operation is within
the discipline of the pharmacologist?

11

A. Yes.

12

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Q. And we have already established
that Dr. Kauffman who gave evidence in the Gary
Murphy inquest was a highly experienced pharmacologist.

14

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A. Yes.

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Q. Now I have the inquest here
and I want to read you some passages from it to see
if you agree with them or if you don't or if they
were part of your understanding about digoxin at
the relevant time. And I point out because it is
necessary to understand it that in the Murphy case
there were pre-mortem serum levels of 4.9 and post-
mortem serum levels of 18 and 20.

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This death, of course, occurs, I
think, does it not, Doctor, outside the epidemic period?



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A. Yes.

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Q. Now, at page number 7,

4

Dr. Kauffman has this to say at line 30:

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"The other thing I want to make sure
you understand is what happens when
you give a dose of digoxin particularly
when you give it by mouth. This
depends to some degree on the way
the digoxin is prepared, whether it
is a tablet or a liquid preparation..."

10

11

And we are talking about the case being discussed
here; that is the Murphy case, which was a liquid
preparation.

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"When you give a liquid preparation
of digoxin the solution is relatively
rapidly absorbed, and the data that
I have seen, concentration after an
individual dose, the concentration
peaks around one to two hours after
the dose and it can be transiently
very high. It can be up to fivefold
higher than it will be a few hours
later because it is absorbed into the
blood and then it distributes out of
the blood back into the tissues out

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"in the body and strictly eight hours after the dose then the concentration in the blood or the serum is in equilibrium with, not equivalent to but in equilibrium with the other tissues in the body and will reflect what we call a steady state situation so that if a patient is on getting a dose of digoxin twice and has been receiving that dosage for months to years, what you will see if you plot the concentration of the digoxin in the serum is on this axis, and time after the dose on this axis is at the time of the dose say we have a digoxin level of one left over from the previous dosage in equilibrium to all the tissues, but you give him a dose and the level will, let's say this level up here is five..."

He is obviously looking at a board.

"...the concentration in the serum will transiently go up as it is absorbed and then over the next six to eight hours gradually come down to the level



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And he is indicating a part of his body I think.

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"where it started here until the next dose. and it will go up and level out here. And this is why routinely we always recommend that the digoxin level if it is drawn for monitoring patient treatment, helping patient care, not be drawn here..."

"...because that will give you erroneously elevated concentrations that you can't interpret. We try to always try to draw it eight to twelve hours after the dose. We are sure it is reflecting the concentration in the system that is in equilibrium with all that is bound out in the tissues.

Q. You are talking about somebody is alive?

A. Yes, I am talking now about general use of digoxin in a patient.

Q. Right.

A. I am just trying to give an idea as to how this drug behaves in the body.



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"Q. A very quick rise and then
a slow drop or decay?

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A. This is over a period of
eight hours. This usually occurs
one to two hours and then by six to
eight hours it goes down to the base
line again. This is on a patient
who is given the same dose for a
long time. Any other questions?"

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Now, first of all, does that reflect
a cardiologist's, a cardiologist with your experience,
understanding of how digoxin operates?

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A. Yes.

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Q. Now, at page 12 - it's too bad a pharmacologist wasn't called early but we have to do it this way. At page 12 Dr. Kauffman says this, and I read part of this earlier but I want to read the whole passage to get your view about it:

"Q. And how, as a matter of general medicine, this..."

And this is a question:

"...apart from any specific hospital policy, as a matter of general medicine, is it usual for a doctor, a cardiologist, to order periodic digoxin level tests?"

"A. You mean on a routine or on a regular basis? Well, that's -- I wouldn't say it is. It is not a routine thing. It is really at the discretion of a physician based on the patient and the patient's condition and everything that is going on clinically. It is something that is used selectively like any other laboratory examination to help you in specific situations."



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Would you agree that that, Dr. Rowe, was the clinician's approach to serum level testing at the relevant time?

A. Yes. I think it varies a little bit with the experience of the physician.

Q. Yes.

And then Dr. Kauffman goes on at the same page:

"It would not be unusual for a child who is doing quite well, who is receiving digoxin and getting along perfectly okay, not to have the digoxin ever measured. On the other hand, if the child is showing symptoms that it might be toxic, you don't know, you might want to measure. So it is in general use. It is sort of a selective thing at the discretion of the physician." Do you agree with that as a statement of the clinician's approach?

A. Yes. I think that is a reasonable statement.

Q. And then:

"I don't want to ask you to pretend



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to know what hospital policy was at the Hospital for Sick Children for a routine test or not for digoxin, but I think you know from the chart that there were weekly tests ordered for Gary Murphy."

He, of course, as we have said, died after the epidemic period.

"A. I am aware of that. I assume there were specific reasons for doing that and didn't question it particularly."

"Q. The signs of toxicity, especially on an infant, if you had vomiting, which we have heard from a previous witness, poor feeding, irritability, are these necessary things which would hold up a red flag to you and say, aha, there is digoxin toxicity present?"

And I am not going to read all this passage because I read it before, and that is the passage in which Dr. Kauffman said that these symptoms, vomiting, sudden onset and so on, can be associated with a myriad of other things in an infant of this age.



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Do you recall me reading that on
your first day?

A. Yes, I do.

Q. And that is the clinician's
understanding and experience?

A. Very much so.

Q. Yes.

MR. STRATHY: Mr. Commissioner,
as Mr. Scott has finished in this particular area, I
just wanted to raise one matter.

MR. SCOTT: Well, I'm not, but
raise the matter.

MR. STRATHY: Do you mind if I
interject at this point then?

Mr. Scott indicated to the witness
that the levels in Murphy; that is, Gary Murphy, were
4.9 pre-mortem and 18 or 20 post mortem.

My understanding differs from that
based on a reading of the Murphy Inquest transcript,
and I concede it is not the best record that we might
have, but my understanding is that the pre-mortem
level, which was taken sometime prior to death; that is,
the 4th of April, the death being the 23rd of April,
the last pre-mortem reading was 1.5 nanograms and not
4.9, and that the 4.9 reference that Mr. Scott is



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2 referring to is a greater-than-4.9 reference that
3 was taken post mortem, and the reference for that
4 is in Dr. Kauffman's evidence at page 18, and that
5 in fact the post mortem readings - well, there were
6 readings in the 18 to 20 range, there was also a
7 reading of 32 nanograms in the heart and 24.5 in the
8 right atrium and 29 in the right ventricle.

9 Now, maybe we can clarify that
10 between Mr. Scott and myself.

11 MR. SCOTT: I don't know that
12 anything turns on it.

13 MR. STRATHY: It may not.

14 MR. SCOTT: But I think it is true
15 that the 4.9 reading may have been post mortem and
16 was diluted, but I don't know and if my friend says
17 that that is what his reading of the transcript
18 reveals, I defer to it.

19 THE COMMISSIONER: The only thing
20 I want to say is I would like to encourage the use of
21 ante mortem as opposed to pre-mortem. I don't know
22 about anybody else but I use initials for everything
23 and I put 'pm' and if that turns out to be both pre-
24 mortem and post mortem, we are going to be in trouble.

25 So, I think, if you don't mind,
everybody will try to use ante mortem. Besides 'mortem'



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D6 2 is Latin and 'ante' is Latin and I don't know what
3 'pre' is.

4 MR. STRATHY: If I do 'am' and 'pm'
5 I get confused with morning and afternoon.

6 THE COMMISSIONER: Yes, but I think
7 we can probably distinguish the two somewhere along
8 the line.

9 MR. SCOTT: I get confused with
10 'am' and 'pm', too, and all this cutting into my time.
11 Mr. Strathy. I want to finish quickly so we can get
12 a new face up here.

13 THE COMMISSIONER: Okay.

14 MR. SCOTT: But I will try and do
15 that, sir.

16 Q. Then, Dr. Kauffman goes on
17 at page 13:

18 "A level will give you, can help
19 you if it is within the 'therapeutic
20 range'. You can dismiss it as being
21 a factor in the symptomatology. If
22 the level in a baby this age is
23 higher than that, you know, 3 or 4
24 milligrams per mill, it may not be
25 causing the symptoms and sometimes
you make that judgment in retrospect



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D7 2 if you decrease the dose and the
3 symptoms go away when the concentra-
4 tion is reduced But that is, it/^{is}most
5 helpful if you can document that the
6 digoxin level is not particularly
7 elevated and then you can assume
8 the symptoms are due to something
9 else."
10 And is that the clinician's
11 approach and experience?
12 A. I think in general, as long
13 as there isn't an electrolyte disturbance as well.
14 Q. Yes.
15 Then at page 19, Dr. Kauffman says -
16 the question is "Okay" and then he says:
17 "One thing I should say, I don't
18 mean to interrupt you, the post
19 mortem, the general principle, is it not
20 the post mortem digoxin levels are
21 always, are often higher or may
22 be higher than the reading of a
23 person who is alive?"
24 That's the question:
25 "A. Generally that is true, yes."
"Q. How high can it multiply by



D8

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this multiplier effect?"

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"A. Well, the data published

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stated, that I have seen, it depends

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on the location, the type of sample,

6

the time after death and so forth.

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I have seen data where it has been

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documented where it had certainly

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tripled from pre-mortem levels.

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Whether it can more than triple, I
am not certain."

11

"Q. Mr. Cimbura said yesterday..."

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That must be the same Mr. Cimbura that we know.

13

"Mr. Cimbura said yesterday that it
could even quadruple perhaps."

14

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"A. I would accept his word on

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that. The information that I have

17

seen is that it can be anywhere

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from one and-a-half to threefold

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greater than the pre-mortem concentra-
tion."

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Now, Doctor, I have two questions:

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At the present time, is that your understanding about

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post mortem readings in digoxin and the understanding

23

of other like cardiologists?

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A. In this rapidly changing

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D9 2 world, I think I can say that it is, but I'm not --
3 Q. Now --
4 A. I'm sorry.
5 MR. LAMEK: Let him finish.
6 MR. SCOTT: I'm sorry.
7 A. Because it seems to me that
8 the knowledge in this area is changing all the time.
9 But that is my general understanding.
10 Q. All right.
11 Did you have any knowledge about
12 the escalation of post mortem values during the
13 epidemic period?
14 A. No, I had no knowledge about
15 post mortem levels at all in that period.
16 Q. What about other cardio-
17 logists of like experience, did they have knowledge
18 during the epidemic period of post mortem values of
19 digoxin?
20 A. Well, there have been papers
21 published on it, I understand, by other cardiologists,
22 other perdiatric cardiologists, but I wasn't parti-
23 cularly familiar with any of that.
24 Q. All right.
25 Then at page 42, Dr. Kauffman says
this in response to a question - and I don't think it



D10

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2 is helpful to read - it is quite long:

3 "Let me rephrase what I hope I can
4 communicate."

5 That's a sentence I am going to just write down and
6 put it in my pocket.

7 "Let me rephrase what I hope I can
8 communicate. I think very little is
9 known about the factors that control
10 digoxin distribution and binding in
11 the body and when you look at the
12 literature on concentration in the
13 tissues, they tenfold in infants
14 even without this kind of severe
15 situation. So there is a lot we don't
16 know."

17 "A. And what I am saying is, I think
18 that between April 4th and the time
19 Gary died, his deterioration and his
20 condition was such that it resulted
21 in a redistribution of digoxin in his
22 body such that he may have had pre-
23 mortem levels somewhere between 6
24 and 10. You know, I am giving you
25 a number but I expect it could have
been a range. We don't know what



D11

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it was over 4.8."

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I think 4.8 was the pre-mortem level.

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"If you can accept that, there is no problem at all in explaining a post mortem level of 20, which is essentially what we are dealing with. You can talk about 18 or 22 or whatever, but we are really dealing in that range, and I really think that is what took place."

11

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Now, Dr. Rowe, I want to ask you two questions: At present, is it within your understanding as a cardiologist, bearing in mind the state of your present knowledge, that pre-mortem levels may escalate in various parts of the body well above the serum level that is obtained within six hours of the dosage?

17

18

Do you have any information about that, as Dr. Kauffman outlined it?

19

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A. No, I am not familiar with all of that work. I am aware of the debate that is going on about it. I know of some patients where it has been established that digoxin levels rise while the patient is off digoxin in terminal phases of the disease.



D12

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Q. You see, what Dr. Kauffman -

I just want to know if you know about this; I am not asking you to say you do if you don't, but what Dr. Kauffman was faced with, as I understand it, and he will be here in due course, was a patient whose last reading on April 4th was 4.8 and whose post mortem reading was 18 or 20. Dr. Kauffman says:

"What I am saying is, I think that between April 4th and the time Gary died, his deterioration and his condition was such that it resulted in a redistribution of digoxin in his body such that he may have had pre-mortem levels somewhere between 6 and 10."

Now, are you familiar with that phenomenon?

A. I am not familiar with it. I am familiar with the speculation.

Q. Yes, all right.

Well now, you have dug out for me appropriately enough an article that comes from New Zealand, haven't you?

A. Yes, I have.

Q. Do you have that in front of



D13

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you?

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A. Yes, I do.

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Q. And this article is entitled

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"Serum Digoxin Levels in Neonates, Infants and Children
6 with Heart Disease", and is, as usual, by a cluster of
7 authors.

7

8

A. Yes.

9

THE COMMISSIONER: Exhibit 133.

10

--- EXHIBIT NO. 133: New Zealand article entitled
"Serum Digoxin Levels in
11 Neonates, Infants and Children
with Heart Disease".

11

12

MR. SCOTT: Q. Now, before we

13

come to the graph to which I want to draw your parti-
cular attention in this article, Doctor, can you tell
14 the Commission what this article was about and what
15 its basic conclusions are as you understand them.

16

A. Yes. This was a method to

17

examine the correlation between the digoxin administered,
18 the dose of digoxin administered to babies, to children
and between the dose and the serum level and to see
19 if they could make further contribution to knowledge
20 about the levels in relation to age particularly. The
21 patients were all those with heart disease on a
22 cardiac ward in a cardiac institution in New Zealand
23 and the vast majority of them had congenital heart

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disease. There were no premature infants in the study.

So, it is a group of babies and they had different dosage schedules which were used and then they had levels taken in the way they have described under their "Methods" section.

Q. Now, what can you tell us is the conclusion, as you understand it, of the paper?

A. Well, they conclude that under the age of four months the patients had significantly higher serum digoxin levels than older patients.



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Q. On the same dosage?

A. In the high dose group, particularly, compared with lower dose in older individuals. There were only two patients in the entire series that showed any toxic manifestations, one in the over four months and one under four months. I think their conclusions, they use this information to show that indeed under four months of age the levels for the comparable dosage tend to be high in babies, and they had to address there the question of what the reasons were for that, but that was largely a matter of speculation. They didn't think it was related to renal appearance although that is the commonly held view.

Q. Well now can I take you to two charts in the article, on page 8, in the second column, one under four months of age, and one four to 18 months and older. Can you describe the first chart, Figure 3?

A. Well that, on the vertical axis that shows a serum level of digoxin.

Q. The test?

A. The test.

Q. Yes.

A. And on the horizontal axis



E2

1
2 the maintenance dose of digoxin per day in micrograms.
3 Q. All right.
4 A. Ranging from 10 to 22.
5 Q. And what is the line?
6 A. The line is - I think the
7 line of the average number, I am not sure what - I
8 guess that is the line of the ---
9 Q. Now, what are the dots?
10 A. The dots are the individual
11 readings.
12 Q. Can we place, what is the
13 limit of the therapeutic range in the so-called
14 manual, 2.5?
15 A. I think in the manual it
16 says over 2.5 one should be suspicious.
17 Q. Now I take it - or, let me
18 put it this way, can we find out the number of serum
19 tests, in this diagram, that gave readings over 2.5?
20 A. That would be possible to
21 calculate, I haven't done that, but at the higher
22 levels of dose there is a substantial number above
23 the value.
24 Q. Just so I know how to do it,
25 do I simply draw a line half way between two and three
on the vertical axis?



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2

A. Yes.

3

Q. Across the page?

4

A. Yes.

5

Q. And then count the dots?

6

A. Right.

7

Q. Well I am not going to do it exactly, but it looks to me as if there is somewhere between 10 and 15 readings, serum levels, above 2.5.

9

A. Yes.

10

Q. Now, what was the finding with respect to signs of toxicity?

12

A. Well there was only one patient in that group that had toxic effects and that was a patient and his level is marked with an X.

14

Q. He is up at 6?

15

A. Somewhere around 6 micrograms, I'm sorry, 6 nanograms per millilitre, I am sorry.

17

Q. What toxic symptoms were there for the patients who were 5, 4 and 3?

18

19

A. None, according to their description there were none.

20

21

Q. Did any of them die?

22

A. I can't be sure, I can't remember whether he puts in mortality or not.

23

Q. Now Figure 4, I lead at risk,

24

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but is that the same figure for a different age group?

A. It is for the older infants, yes. Those levels don't achieve the same level, high levels, they don't have the same upward cluster that you see on the first chart.

Q. Well now, when you as a cardiologist, and I want you to speak about your profession, prescribe digoxin, are you prescribing it to obtain, in order to induce a serum level?

A. No, no, I am not.

Q. What are you prescribing it to do?

A. I am prescribing it to have a clinical effect on the degree of heart failure that is present.

Q. And how do you measure the clinical effect that you are seeking?

A. By the patient's condition, the improvement, the return of liver size towards more normal range, the disappearance of gallop rhythm, improvement in distress, the rales and so on.

Q. Have you heard the expression "a cardiologist doesn't go for a level", he goes for "effect"?

A. That is the principle upon



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which we work.

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Q. Are you concerned absent
toxic effects, are you concerned about a serum level,
absent toxic effects, above 2.5?

6

7

A. No. If you ask me how far
above 2.5 I might have to make another response.

8

9

Q. All right, yes. Well, I won't
ask you, but we have asked the question, so see if you
can help us.

10

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A. I think I would be prepared
to go up to 3.5, and if I found a level of 3.5, as
I am sure happens a lot in hospitals, people would be
loath to disregard that even in the absence of
symptoms.

15

16

17

18

Q. I have got an agenda here,
and I want to ask you to look at a number of cases.
Just so my friends will understand, these are all the
cases of which I am aware in which there is a serum
level pre-mortem in excess of 2.5 ante mortem.

19

20

THE COMMISSIONER: I was just thinking
that you would give up that lesson.

21

MR. SCOTT: I am a slow learner.

22

23

24

25

Q. I asked you to try and collect,
Doctor, and perhaps we can go at this way, I asked
you to try and collect the names of the deceased



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babies, for whom there was a serum level about 2.5,
or about whom there was any contemporaneously
suggestion on the record of digoxin toxicity up to
mid March, up to Pacsai, not including Pacsai. Do
you remember making that list for me?

A. Well, I took those in whom
the question of toxic level, or possibly toxic levels
and the therapy might be considered arguable.

Q. And what are the names of
those babies?

A. They were Gage, McKeil,
Gosselin, Estrella and Inwood and I think it is
Leith, I'm not quite sure if Leith is one there,
but there is one level amongst many that was higher,
the rest were all right.

Q. I'm just going to ask you
to add one name to that list and that is Taylor,
have you got the data on Taylor?

A. I can get it.

Q. Let me deal with Taylor first
then. My record reveals ---

MR. PERCIVAL: Mr. Commissioner,
I am trying to understand, my friend used the word
"mid March" and I wonder where that gets us and what
it excludes of the 36?



1

2

MR. SCOTT: Up to the death of
Pacsai, the Baby Pacsai.

4

MR. PERCIVAL: Does it exclude those
of babies for which digoxin was not at all prescribed?

6

MR. SCOTT: Yes, it does. It
excludes, actually Inwood died the day after Pacsai,
but it excludes Allana Miller and Justin Cook, Justin
Cook I think died when my friend's clients were in
the building, but it excluded Justin Cook and Allana
Miller and Charlon Gardner.

10

11

MR. PERCIVAL: What about the ones
where digoxin was not prescribed of the 36 and no
levels were ever taken?

13

14

MR. SCOTT: What I seek to do, I
am not looking at this from the perspective of March
or later. I am looking at this seeing what the
doctors would have contemporaneously known, and I am
therefore dealing with all those cases, I hope, in
which there is a contemporaneous question raised
either by the reading, the antemortem reading, or
by some note on the chart. Is it clear what I am
now doing?

21

22

MR. PERCIVAL: That would seem to
exclude those then that even though there may have
been digoxin found at a later time for which they

23

24

25



1
2 were never prescribed like Lombardo?

3 MR. SCOTT: That is correct.

4 MR. PERCIVAL: Thank you, that is
5 all I wanted to know.

6 MR. SCOTT: No one in the Hospital
7 knew, and I say this guardedly. I should put it
8 this way, we believe nobody knew that Lombardo had
9 been administered digoxin, if that was the case.
10 I am speaking only to the cardiologists' knowledge
11 contemporaneously.

11 MR. PERCIVAL: Thank you.

12 MR. LAMEK: Shouldn't MacDonald
13 be added to the list?

14 MR. SCOTT: Who?

15 MR. LAMEK: MacDonald.

16 THE COMMISSIONER: Right now I have
17 forgotten what the question was, if we ever got to
18 the question. The background is bearing in mind all
19 of these babies for whom a question was raised.

19 MR. SCOTT: Yes.

20 THE COMMISSIONER: Presumably with
21 respect to digoxin levels, and what is the question?

22 MR. SCOTT: I am going to ask the
23 Doctor to deal with each of them. Perhaps, have you
24 got Taylor?
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THE WITNESS: Yes, I have. The list that I read out concerned those that I thought had levels that could be considered within the toxic range in the therapeutic management, not specifically patients who had questions raised by anybody under the sun.

MR. SCOTT: Q. Okay. So what is your list then, can we just have it again to be sure I understand.

A. I think it is complete but I can be corrected on this.

Q. How is it defined first?

A. As those who had levels of serum - serum levels of digoxin that were in the range of potential therapeutic toxicity.

Q. And what is that range for the purposes of your definition?

A. Above 2.5 or something of that sort.

Q. All right. And we are talking of course about antemortem levels?

A. Yes, we are taking about ante mortem.

Q. Now can I just ask you to add Taylor to that list for my own purposes?



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A. If you wish that I can add that.

Q. Now, the Baby Taylor died, as my record reveals, on July 27th, 1980. There is a note on an ECG to which Mr. Lamek drew your attention that raised a question about dig. toxicity. I think it says "dig. toxicity" and then a question mark. Have you seen that note?

A. That is part of the head nurses ---

MR. LAMEK: It is part of the Radojewski note of the September 5 conference. It is not in the chart.

THE WITNESS: Not in the record.

MR. SCOTT: Q. I'm sorry, I am supposed to use records. Have you reviewed that record?

A. Yes, I have.

Q. From the point of view of Mr. Lamek's concern?

A. Yes.

Q. And what do you have to tell the Commission about it?

A. Well, the electrocardiogram on admission showed some findings which I assume the



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reason for the comment, that is there was some ST
segment changes a part of the record that is often
affected when digitalis is given.

5

Q. Can I stop you just there.

6

There was something in the ECG that an experienced
nurse or doctor would see, is that right?

7

8

A. Yes.

9

Q. That raised what possibility?

10

A. The possibility of digitalis
intoxication.

11

Q. Right. Now did you look at

12

the whole record to see if there was any reasonable
explanation for that?

13

14

A. Yes, I did.

15

Q. And what did you find?

16

A. Well, the electrocardiogram

17

to which I assume reference was made, is one which
shows changes that are quite compatible with the

18

underlying malformation and are incompatible with

19

digoxin, in that as far as we are aware no digoxin

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had been administered at that time. There was an

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admission electrocardiogram, that is my understanding

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of the remark.

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That is my understanding of the remark, but of course without all the detailed commentary I can't really say more than that.

Q. You are looking at an admission electrocardiogram?

A. Yes.

Q. What does that tell you?

A. It tells me that the findings on that electrocardiogram in relation to the time in which digoxin was started are not due to digoxin but are due to the malformation effect on the heart.

Q. Well then --

MR. LAMEK: Excuse me. As a matter of interest where is that in the Hospital record, please?

MR. SCOTT: It is your Hospital record.

MR. LAMEK: No, with respect it is your Hospital record which I provided copies and Dr. Rowe so recognized it.

THE WITNESS: I don't know. If it is not in that record because there is no ECG in that record I guess.

MR. LAMEK: I haven't seen one. Could we have Exhibit 43 please?

MR. SCOTT: Q. Do you have an answer to that, Doctor?



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A. Yes, I have an answer.

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MR. LAMEK: Okay.

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MR. SCOTT: This is just re-examination
early.

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MR. LAMEK: No, I want to know the
basis on which the answer is given.

7

8

I have a copy of it here, sir. I
wonder if Dr. Rowe could help us.

9

10

THE WITNESS: Yes. I believe there was
no electrocardiogram in this record but there is an
electrocardiogram available which has been - which we
have photocopies of which were returned to us by the
police and it is part of the cardiac --

13

14

MR. LAMEK: Is this the zebra pack?

15

16

THE WITNESS: -- zebra package, and
ordinarily that should be in the record. I am not
quite sure why that wasn't.

17

18

MR. SCOTT: Q. Well, it is in the zebra
package that the police returned to us.

19

20

A. They haven't returned it. They
have returned a copy of the zebra package.

21

22

23

Q. I see. Well, we will try and
get a copy or Mr. Percival can produce the original
from the zebra package. Thank you for drawing that
to my attention, Mr. Lamek.

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And would you make a note, Dr. Rowe?
You seem to know better than I what you are supposed
to do, which is to produce that.

A. Yes, I will get that.

Q. Or produce a copy. Now, in sum --

MR. PERCIVAL: I will make inquiries,
Mr. Commissioner, but I understand the originals have
gone back to the Hospital so there may be some break-
down, but we will find this out. Thank you.

THE COMMISSIONER: Thank you.

MR. SCOTT: Q. Now, in sum, Dr. Rowe,
what then is your conclusion about the possibility of
digoxin toxicity in the baby Taylor bearing in mind
what you knew before 1981?

A. I find no evidence of digoxin
toxicity.

Q. Now can we deal with the baby
Gage who died according to my notes on September 25th,
and the question I am going to ask you is to just
deal with the history bearing in mind my question is
going to be is there any evidence in the record up
to that baby's death that raises a reasonable question
of the possibility of digoxin toxicity causing or
contributing to death?

A. In Baby Gage there were a number



F.4

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of digoxin measurements taken and there were some
symptoms that suggested that it might be wise to
withhold the digoxin with some vomiting.

5

Q. Yes.

6

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A. And that was done. Although the
level at around that time - I think there was some
question about whether there was a level of 1.9. I
am not certain - I don't have the Hospital record here.

9

10

Q. Would it be helpful to have the
Hospital record?

11

12

A. I think it might be helpful.

MR. LAMEK: It is Exhibit 61, sir.

13

THE COMMISSIONER: I wonder if we could
get them all out.

14

15

MR. LAMEK: There was a 1.9 level on
September 11.

16

THE WITNESS: 1.9?

17

MR. LAMEK: On September 11.

18

19

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THE WITNESS: On the 11th. But I think
it was fair to say that it was because of vomiting
that digoxin was withheld on the 19th of September
and then resumed, and then on the 24th of September
a level was obtained of 3.5 nanograms so that was
getting into an area where one might be ...

23

24

MR. SCOTT: Q. Can you tell us the time
that level was taken?

25



F.5

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A. I will have to look.

3

MR. LAMEK: Page 126 I think.

4

THE WITNESS: 146?

5

MR. LAMEK: 126.

6

THE WITNESS: The level was at four
o'clock in the afternoon.

7

MR. SCOTT: Q. On September 24th?

8

A. Yes.

9

Q. And the level was 3.5?

10

A. 3.5, yes.

11

Q. Now was digoxin cut off?

12

A. Digoxin was withheld for about a
total of 24 hours before the death of the patient.

13

14

Q. All right. Now can you tell us -
the patient died on the 25th?

15

A. Yes.

16

17

Q. Can you tell us when on that day
the patient died? What time?

18

A. It was 0400 hours.

19

20

Q. All right. Now one other fact:
you have told us that the reading was taken at 4 p.m.
Can you tell us when the preceding digoxin dose would
have been?

21

22

23

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A. It should have been I think at
0900 but I will have to look. I think the sheet for
that is missing, is it not?

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Let's deal with what you have. What you have told us as I understand it is this. At 4 p.m. on the 24th there was a digoxin reading of 3.5.

A. Yes.

Q. The record reveals that digoxin was terminated.

A. Yes. I think that I have a note here that there was no digoxin after 0530 on the 24th?

Q. All right.

A. I don't see where I got that from.

Q. The point I am making, though, is after the serum level there certainly was no digoxin administered according to the record?

A. No.

Q. And the baby died how many hours later?

A. 24 hours after the last dose.

Q. Now what conclusion do you draw from that on the question of whether there is on the record a reasonable question about digoxin toxicity in the case of Baby Gage?

A. I think that one would not expect digoxin toxicity to account for the death on the basis of that evidence.



F.7

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Q. Why?

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A. Because the level was not
extraordinarily high.

4

5

Q. Yes.

6

A. And because the digoxin had been
withheld and there were no other symptoms until the
time of death I think.

7

8

Q. Had been withheld for 23 hours or
so?

9

10

A. Something like that. I am not
absolutely sure. I would have to check this business
about symptoms.

11

12

Q. I draw your attention --

13

14

A. Feeding well I think. Oh, no,
sorry, did vomit once on that day.

15

16

Q. I draw your attention to

17

Dr. Kauffman's evidence that the digoxin dissipates
over 8 to 10 to 12 hours. Does that have any part
in the conclusion that you are drawing?

18

19

A. Yes. We would have expected that
the digoxin level with digoxin withheld should fall
and we would predict that any question of symptoms
related to digoxin toxicity would have been resolved
in that period of time.

20

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22

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Q. Then looking at the record in

24

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Baby Gage is there anything there at all that you can draw our attention to that suggests a reasonable possibility in that record of digoxin toxicity as cause of death?

6

A. No.

7

8

9

THE COMMISSIONER: We have used up your time. I haven't kept a stopwatch on it but I would like to give you some more time but can we have that after the break? We will take 20 minutes.

10

--- Short recess.

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--- on resuming.

MR. SCOTT: Q. Well, Dr. Rowe,
I am living on borrowed time, so we better get on
with it.

Have you said everything you wanted
to say about Baby Gage?

A. Yes, I think so.

Q. Can we turn now to Baby
McKeil? My note is that that baby died on October
15, 1980. Can we again, by your characterizing
in a short sentence or two just to bring it all back,
the problem that confronted this baby?

A. This was a baby with trans-
position of the great arteries and double outlet
right ventricle who had a coarctation of the aorta
as well which had been repaired and had an internal
arrangement which was very complex and not essentially
correctable.

So, the big problems with this
baby had been repeated failure and a lot of difficulty
with vomiting and poor intake.

Q. And on both classification
systems, that is a high risk baby?

A. Yes.

Q. Well, perhaps we can begin



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about a month before the baby died. My note is that on September 16th there was a serum level done which produced a reading of 4.6.

A. Yes, that is correct.

Q. Can you tell when the dose was given?

A. Well, I may not be correct but my interpretation is that the dose was given 25 minutes before that, but I may be wrong.

THE COMMISSIONER: Where do you get that?

THE WITNESS: I've got to find the page, Mr. Commissioner.

MR. LAMEK: The level is shown on 159.

THE WITNESS: Yes.

MR. PERCIVAL: Mr. Commissioner, could we have the exhibit number for the record?

THE COMMISSIONER: Yes, it is Exhibit 62.

MR. PERCIVAL: Thank you.

THE COMMISSIONER: 16th of September at 9:25. Is that the time when --

THE WITNESS: 9:25 was the time that the sample was obtained. The question is when



1
2 the dose was given. I have a note that it was given
3 at 9:00 a.m., but I am trying to find that.

4 MR. SCOTT: Q. All right. Let's
5 leave it there. We are a month before the baby's
6 death and I don't need to pursue it at this stage.

7 What was decided to be done with
8 respect to digoxin following that serum level?

9 A. I'm sorry, I don't have that
10 information.

11 Q. Well, let me summarize, and
12 I think I have got it correct, and we are not down to
13 anywhere near the baby's death yet, but I understand
14 that there is a note in the record that digoxin was
15 held.

16 A. Held, I'm sorry. Yes, held.
17 Hold one dose.

18 Q. All right. Hold one dose?

19 A. That's what it says.

20 Q. And would that be a response
21 to the reading?

22 A. I presume it was, though I am
23 just a bit surprised in light of the -- if my
24 interpretation of the time at which the dose was
25 given and the level, and the time at which the level
was taken is correct, then there would be, in my view,



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no particular reason to withhold the digoxin.

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Q. Is that because of what Dr. Kauffman says; that you are taking a reading too early after the dose?

6

A. Yes.

7

Q. Yes.

8

9

THE COMMISSIONER: I would think if you take it almost too early, even if it was five minutes, it wouldn't have any effect at all.

10

THE WITNESS: 25 minues.

11

MR. SCOTT: It's 25 minutes.

12

13

THE COMMISSIONER: Oh, 25 minutes. I thought you said five minutes.

14

15

THE WITNESS: Well, you know, I will have to check that, but that was my interpretation. I may be wrong.

16

17

MR. LAMEK: Does page 90 help you, Doctor?

18

19

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MR. SCOTT: Q. In any event, a highly conservative course was adopted in the sense that the digoxin was withheld?

21

A. Yes.

22

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Q. And are you telling the Commission that, bearing in mind when the dose was given and when the serum level was taken, you, yourself,



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would not have withheld the digoxin at that stage?

3

A. I think probably that is

4

correct, yes.

5

Q. In this baby is digoxin

6

necessary for its life ?

7

A. Oh, yes.

8

Q. Now, can I take you down to

9

the next serum level, which I think is October 3rd,

10

when there was a serum level of 3.4.

11

MR. LAMEK: September 24th.

12

MR. SCOTT: I'm sorry, I may have

13

the wrong date.

14

MR. LAMEK: And it was 2.5.

15

THE WITNESS: There are two other

16

readings between that point and the 3.4, but they are
both within the usual range.

17

MR. SCOTT: Q. Can you give us

18

what they are?

19

A. 2.5 on the 24th of September

20

and 1.9 on the 28th.

21

Q. Yes. And the baby continues

22

on digoxin?

23

A. Yes.

24

Q. And what is the next reading?

25

A. The next one I have is on the



1
2 3rd of October, 3.4.

3 Q. Yes. Can you tell how long
4 after dosage that serum level was taken?

5 A. Well, again, that needs
6 checking but my understanding is that it was one hour
7 after the dose.

8 Q. In your opinion, bearing in
9 mind Dr. Kauffman's account, has that any implications
10 for the serum level itself?

11 A. Yes.

12 Q. What would it do to it?

13 A. It would make it falsely
14 elevated.

15 Q. Yes. Well now, what happens
16 after that, Dr. Rowe?

17 A. Well, the levels remain. I
18 think the next level was the 6th of October. There
19 was some, because that level nevertheless -- the
20 residents withheld the digoxin initially and restarted
21 it on the 5th of October, and the level on the 6th
22 was 1.2, the level on the 8th was 1.3 and the level on
23 the 14th at 0940 hours was greater than 4.7.

24 Q. Yes.

25 A. Now, that level was obtained,
by my reading, at three and-a-half hours or three hours
and forty minutes after the dose was administred.



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Q. Well, what was done when that reading was obtained?

4

5

6

A. The digoxin was discontinued at that point. But, again, I think it may represent a rather inflated value, though we don't know quite what it was.

7

8

Q. All right. And we don't know precisely what the value was because it's greater-than?

9

A. Yes.

10

11

Q. But the response was to discontinue digoxin?

12

A. Yes.

13

Q. Is that a decision of which you approve, or would have taken yourself?

14

A. Yes, I think so.

15

16

Q. Yes. And what happened next?

17

A. The digoxin, I think, was not given again.

18

19

Q. Well, the baby died the following day.

20

A. Yes.

21

Q. Can you tell us what time the baby died?

22

A. Well, on my note, it is 0427.

23

I don't know whether that is absolutely correct.

24

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Q. That is what I have. And that
would be on the 15th.

3

4

Is there any evidence in the record
that digoxin was administered after the reading taken
at 9:40 a.m. on the morning of October 14th?

5

6

A. No.

7

8

Q. No. Now, I think you told us
that the dosage would have been about three hours
earlier; is that what you said?

9

10

THE COMMISSIONER: Three hours and
forty minutes before the test.

11

12

MR. LAMEK: Three hours and forty
minutes.

13

14

MR. SCOTT: All right.

15

16

Q. So, is there any evidence
in the record that another dosage of digoxin was
given between 6:00 a.m. on October 14th and the death
of the baby at 4:27 on the morning of the 15th?

17

18

A. No.

19

20

Q. Now, I have calculated it
but, subject to what everybody else calculates, that
means that the baby died some 22 hours after the last
recorded dosage of digoxin?

21

22

A. Yes.

23

24

Q. Was there any communication,

25



1
2 as far as you know from the record, with the parents
3 of the baby?

4 A. Yes. I think the parents
5 were told that the levels were at the toxic range.

6 Q. And that would refer to the
7 level taken on the morning of the 14th?

8 A. Yes.

9 Q. Were they told, or would they,
10 in the normal course, have been told that digoxin was
being cut out?

11 A. Yes.

12 Q. Yes. Would a cardiologist
13 or a resident have discussed with them the consequences
of that?

14 A. I think so. I'm not sure.

15 Q. And what are the consequences?

16 A. That though the level was
17 high and the precise level might not have been known,
18 by discontinuing digoxin was the appropriate way to
19 bring the level down.

20 Q. Yes.

21 A. And I don't know whether they
22 went into the question of the perhaps spurious ele-
vation because of the sampling time.

23 Q. Well now, you formed an opinion
24
25



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sometime after that about the cause of this baby's
death?

3

4

A. Yes.

5

6

Q. Based on the information that
you obtained by talking to the cardiologists and the
record, and you told Mr. Lamek that.

7

8

Is there any evidence in this
record which would lead any reasonable cardiologist
to suspect that the digoxin was the cause of death?

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A. No. I think I have said
before that we can't rule out some contribution but
that I would have expected that not to be the cause of
death.

13

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15

16

Q. And I take it that if there is
some contribution, are you speaking of a contribution
that is reflected by the serum level reading on
October 14th at 9:40?

17

18

A. Yes.

19

20

21

Now, leaving aside what you know
about what happened in March, is there anything that
up to the end of the year changes your opinion about
how Baby McKeil died?

22

23

A. No.

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H/DM/ak

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Q. Now, can we turn to Gosselin, have you got that in front of you?

A. Yes, I have.

Q. Now just to lead you a bit, my understanding is that that baby was transferred from Winnipeg, that was your evidence?

A. That's true.

Q. And arrived in the Hospital on December the 17th?

A. Yes.

Q. And died on December the 18th?

A. Yes.

Q. And can you just tell us once again in a sentence or two, your assessment of the baby's admission condition?

A. This baby was critically ill with an extremely severe coarctation of the aorta. It was almost a complete interruption of the aorta, and had a mild degree of underdevelopment of the left ventricle as well. So it was a very severe patient, severe condition with extreme heart failure which had been treated in Winnipeg and recognized as something that needed surgical treatment that could not be done there. So the baby was transferred at 3 o'clock in the morning arrived at the Hospital



1

2

for Sick Children.

3

Q. Yes.

4

A. It was started on treatment.

5

It was not started on any digoxin because digoxin

6

in moderately high doses had been administered to

7

the baby in Winnipeg, the last dose being some eight

8

hours before arrival.

9

Q. About 7:00 p.m.?

10

A. Yes. We were I think - when

11

I say "we", the cardiologists involved were concerned

12

about the state of perfusion of this baby, the

13

question of how much renal perfusion there might be,

14

because this is a condition where there is a great

15

likelihood of impairment of perfusion of organs

16

below the area of the coarctation and so they didn't
give any more digoxin.

17

Q. Does the record reveal that

18

this baby received any digoxin at Sick Children's
Hospital?

19

A. I don't believe there is

20

any record of that.

21

Q. Was a serum level taken some

22

time after the baby arrived from Winnipeg?

23

A. The level was taken at the

24

time of the initial examination at, I think 4:30,

25



1

2

that is an hour and a half after arrival.

3

Q. And what was that level?

4

A. That level was 3.7.

5

Q. And I take it that the

6

determination was made not to administer digoxin?

7

A. Yes.

8

Q. Well now, what happened to

9

the baby, when did the baby die?

10

A. The baby died at 03.17 by

11

my list on the 18th, which is about 24 hours after
arrival.

12

Q. Some 32 hours after the last

13

known digoxin administration?

14

A. Yes.

15

Q. What was the pattern of the

16

baby's life as it approached death?

17

A. Well, the baby had increased

18

heart failure recognized and that wasn't surprising,
and had to be treated with diuretics, more diuretics

19

and was being treated with prostaglandins to try and

20

open up the ductus although that didn't appear to be

21

working. So we had the position of a very sick infant

22

who was getting worse and whom we were not able to

23

give more digoxin, and there was some improvement

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temporarily with lasix, but then the onset of the

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final episode in the early hours of the morning.

Q. Let me ask you this, in a case like that where the baby is given a serum level of 3.7, no, I have got it wrong, it doesn't matter, but the baby is, you know, in the intervening period and up to 24 hours later is obviously very close to death, would any consideration be given, notwithstanding the readings some 24 hours before of taking a chance to give it more digoxin to perserve its life?

A. Well that might be a consideration, but most people are unwilling to do that, but it is a dilemma in this group of patients. Because where the ~~pro~~^{per}fusion of the kidneys is so grossly impaired then there is the possibility of the levels in the blood becoming even higher. It is a difficulty that we run into in this severity illness. You have to give digoxin in order to get any benefit in the baby. And yet you run some risk that if the ~~pro~~^{per}fusion of the kidney is going to decrease steadily that the levels could rise. It is a very difficult dilemma therapeutically and one in which you have to make choices and hope that the choice will be the correct one.

Q. And the choice made here, as the record reveals was to hold digoxin?



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A. Yes.

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Q. All right.

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Q. Looking at the Gosselin baby, is there any evidence on the record, looking at the baby after its death and looking at its history and its treatment, is there any evidence on that record that suggests to a reasonable cardiologist that digoxin may have played any part in the baby's death?

A. I don't think we can exclude the possibility but I don't think it was the major inference at all.

A. I would think that that level is not at a danger point, but I cannot say what it might not have been like just before the death.

Q. So what you are saying, if I have it right, is that the possibility that the therapeutic dose administered in Winnipeg, at the Winnipeg Hospital, held on and made some, might have made some contribution to the baby's death?

A. Yes, especially since as we have already heard, there is more and more information coming out about the shedding of digoxin, or septus and so on. I don't think that is anything proven yet but I think it is something that might perhaps even today sway us a little more in that direction.



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Q. And can we turn now to the Baby Estrella who died on January the 11th, 1981, and I want you to look at this case for the moment as you would have looked at it on the record and without the postmortem examination.

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Mr. Commissioner, I can tell you, if it is of any help, that the evidence is, at the Preliminary Inquiry, that the postmortem results were available I think two weeks later, that is the postmortem results were available to the pathologists two weeks later.

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So look at this case as you would have looked at it in the week or so succeeding the baby's death, looking only at the record. What can you tell us about the Baby Estrella? First of all, had that baby been on digoxin for a long period of time?

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A. Yes, it had. She was the baby with Down's Syndrom and had a repair of an atrial ventricular defect which is a major defect of the septa of the heart and the valve, common valve between the atria and the ventricles, and had had a very considerable amount of trouble post-operatively because of persistence of congestive heart failure, which in the end was believed to be the consequence



H7

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of rather major mitral valve regurgitation, or
leakage.

3

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5

Q. Was digoxin therapy necessary
for this baby's life?

6

A. Yes, it was.

7

8

Q. Now this baby was admitted
I think in December, is that correct?

9

A. The 14th of December.

10

Q. And was the baby on digoxin
therapy?

11

A. I believe so, yes.

12

13

Q. And were levels were taken
in December?

14

15

A. I am not sure, I would have
to look at that.

16

17

Q. Well I think I can come on
without the necessity of going as far back as
December.

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MR. LAMEK: Page 152, Doctor,
it's the reading of December the 22.

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EMT.jc

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THE WITNESS: Digoxin level, thank you,

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Mr. Lamek --

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MR. LAMEK: I am sorry.

5

THE WITNESS: -- on the 22nd of

6

December.

7

MR. LAMEK: On 162.

8

THE WITNESS: On page 162, 1.5 nanograms.

9

MR. LAMEK: That is the only one I see.

10

THE WITNESS: And there were more

levels taken in January.

11

MR. SCOTT: Q. Did something happen on

12

January 7th?

13

A. Yes. I think that there was - I

14

am not sure if it was the 7th. Yes, the 7th there was
a problem with lethargy.

15

THE COMMISSIONER: There was a cardiac

16

arrest, was there not?

17

THE WITNESS: And a 23 was called at

18

about 6:50 in the morning. The heart rate dropped

19

and respiratory rate dropped and the --

20

MR. SCOTT: Q. Was the baby on digoxin

21

therapy at that time?

22

A. On digoxin and the liver was

23

enlarged and the baby required fairly active

24

resuscitation as you may recall. Consideration was

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I.2

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even given to transfer to the Intensive Care Unit.

3

But at 10:15 a nurse noted that the heart was a little irregular and the digoxin level was drawn then which

4

was greater than 5.

5

Q. That is 10:15 on what date?

6

A. Well, that is on the 7th of

7

January.

8

Q. And the serum level was greater

9

than 5?

10

A. That is what I have here in my

11

notes.

12

Q. That was four days before the

13

baby died?

14

A. It was greater than 5 and it was taken at 8:20 on the 7th of January, so it was taken I guess after the arrest or after the near arrest.

15

16

Q. Yes. Code 23 is a near arrest;

17

is that it?

18

A. Yes.

19

Q. Did this baby have apnea, one of the conditions you discussed with me on the first day?

20

A. Yes, it did have.

21

Q. Well now, when the reading was

22

obtained on the 7th of greater than 5, what was the

23

reaction as far as you can judge from the record? What

24

was the response to that?

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A. Well, I think that as I see it there was no digoxin administered. It was on hold at the time of the dig. level being drawn and I think it was given again after the 2100 hours on the 6th.

Q. The reason I ask the question, Doctor, is my recordkeeping in these 36 cases over nine months reveals that of all the serum levels taken on all these babies greater than 5 for the baby Estrella four days before her death is the largest serum reading up till that time?

A. Yes. I am not sure what greater than 4.9 may be inferred as.

Q. Oh, yes. I am sorry about that.

A. Presumably about the same interpretation.

Q. I was looking at the number again rather than the greater sign.

Now what was the response to this reading?

A. Well, digoxin had been on hold from the 6th I believe. 6th of January, and I don't believe there is any evidence that it was given again after 2100 hours on the 6th.

Q. Does the record reveal then any digoxin administered after 2100 on the 6th?



I.4

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A. That is my understanding of the record.

4

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Q. When you got the greater than 5 level was a kidney test done?

6

A. I am sorry, I can't answer that immediately.

7

8

Q. Well, is a BUN test a kidney test?

9

A. Yes, B-U-N.

10

Q. Yes. Was a BUN done?

11

A. Yes, it was.

12

Q. When was that done?

13

A. At least if you say it was, it was. I have to look at the chart.

14

Q. Well, you look at the chart.

15

A. The 7th, on the 7th of January it was 32.

16

Q. What does that mean?

17

A. That is elevated. It means that the renal function is impaired.

19

Q. What does that mean if anything in relation to the reading of greater than 5 of the same day?

21

A. Well, it would be significant in that it might be accounted for by that.

23

Q. Just tell us the process. We

24

25



I.5

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don't have to repeat indefinitely, but what is the
process by which it might account for it?

3

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A. Because if it cannot be excreted
easily through the kidneys it will be accumulated in
the blood.

5

6

7

Q All right. And digoxin was on
hold. Were other serum levels taken?

8

9

A. Yes, they were after that. On
the next day it was 21 which was at the border line,
and then the subsequent levels were low.

10

11

Q These are the BUN tests?

12

A. Yes. Subsequent levels between
the 8th and 10th were within normal range.

13

14

Q All right. So that by the 8th
the kidney function seems to be within normal range?

15

A. Yes.

16

Q What about the digoxin serum tests?

17

A. By the 9th - yes, by the 8th,
sorry. Serum digoxin levels on the 8th were greater
than 4.7 and on the 9th 4.7.

19

Q And the baby died on January 11th?

20

A. Yes.

21

Q So the last test taken was on

22

January 9th, 4.7?

23

A. Yes.

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Q. So the last test taken was on
January 9th, 4.7?

A. Yes.

Q. Now, Doctor, you have given the
Commission your opinion, your judgment, as to the
underlying cause of death in this baby. Is there any
evidence in that record that would suggest to a
reasonable cardiologist that digoxin toxicity was the
underlying cause?

A. Well, I have said that there may
be some contribution but I didn't think that this was
the primary problem because the baby had the same
dilemma that we had with one other we talked about,
congestive heart failure was getting worse.

On the 8th there were notes to that
effect, and we can't give more digoxin because the
levels were high. There could be an interpretation
that the levels are beginning to come down a little
over the next few days but we don't know what the
level would have been on the 11th.

Q. So it is like Gosselin, you want
to give digoxin but you can't?

A. Yes.

Q. Is that right?

A. Yes.



I.7

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Q. And in this case, as the record reveals at least, you didn't after the 6th?

4

A. No.

5

Q. Well now --

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A. So the problem here is how much of a contribution if any digoxin had towards death.

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We were pretty convinced that the failure was the key factor, and that was reinforced by the staff cardiologist who was involved with that baby, and there are no symptoms during the 9th and the 10th that would strongly suggest digoxin was a problem because the baby's heart rate was regular; there were no suggestions of anything that might point strongly towards that the level was climbing up. So that really in the last day or so there is no evidence to suggest digoxin toxicity.

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Q. Can we now turn to Baby Inwood? My note reveals, Doctor, that this baby died on March 13th at 0300, and had been admitted on March 11 so the baby had been in the Hospital about two days. The baby was 18 days old at its date of death. And can you just tell us in capsule the problem with that baby again?

A. The problem was coarctation of the aorta with associated anomaly of a bicuspid aortic valve and ductus arteriosus.



I.8

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Q. Is that a high level risk?

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A. That is a moderately high level

4

but not very high.

5

Q. All right. Can you tell us what

6

you know from the record about the administration of

7

digoxin? Isn't this the case when the digoxin was

8

dosed early?

A. There was an error in the diagnosis.

9

Q. Where there was the incident

10

report?

11

A. Yes, I believe that is true.

12

Q. Just if it helps you find it in

13

the record, my note is that digoxin should have been

14

given on March 12th at nine but was given instead at

5:30 a.m.

15

I am sorry, my friends are correcting

16

me here. Perhaps I had better let you tell us about

17

Inwood. But I have got this deadline; the Judge

18

wants to see a new face here.

19

A. I think the situation, to try

20

and accelerate that, was that at 0600 on the 12th of

21

March an order was written to withhold the next four

22

doses and digoxin level ordered for that afternoon,

23

and I presume that that relates to the error, the time

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of the administration of the error.

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Q. So when does the last digoxin administration appear to have been?

A. At the time when whatever that dose was was given.

Q. 0600?

A. I don't know when that was given. That was when the doctor wrote the order.

THE COMMISSIONER: 0530.

MR. SCOTT: I have 0530 and these people are all saying no, no, you are wrong.

MR. PERCIVAL: I think that was the one that was in fact given at 5:30 by mistake. It was supposed to be given to another baby but was given to this particular baby and that was the basis of the incident report; not that it was given early.

THE WITNESS: I don't think you can tell that from the record.

MR. SCOTT: Well, Mr. Percival is giving evidence too.

MR. PERCIVAL: No, the incident report is in. You put it in, Mr. Scott.

THE COMMISSIONER: It is Exhibit 113A and it tells us whatever it does tell us, but I read this as digoxin was given when it shouldn't have been given at all. Isn't that what that report seems to say?



I.10

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THE WITNESS: No, digoxin was ordered.

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THE WITNESS: No, I don't.

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THE COMMISSIONER: Anyway, does this matter to your question?

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MR. SCOTT: What I want to get, and I think I have it:

12

13

Q Digoxin appears to have been administered at 5:30 a.m. on the 12th.

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THE COMMISSIONER: I can answer that question.

16

MR. SCOTT: And the answer is yes, isn't it?

17

THE COMMISSIONER: And the answer is yes.

18

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MR. SCOTT: Q All right, we will move along, Dr. Rowe. This combination agreed on the facts. It is just overwhelming.

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Does the record reveal that any other digoxin was given to this baby before it died?

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BM/wb

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A. I don't think that was, no.

Q. All right. Does the record reveal that in the light of the dosage problem a serum level was taken at 900 hours.

A. Yes.

Q. And what was the level?

A. The level was 2.6.

Q. Do you have any comment on that level in light of the fact that the digoxin was administered at 5:30?

A. Yes. Well, that would be earlier than you would expect a sample to be taken because of the time relationship of the acute phase distribution of the drug. Now, I would nevertheless interpret that meaning that if a level had been taken at true time the value would not have been excessively elevated.

Q. Well now, everyone ^{regrets} ~~regards~~ the error that lead to this, of course, but at that moment when you know the mistake has been made and when you know what the serum level is and when the order is given 'no more digoxin' is there anything to be alarmed about by virtue of the administration of the digoxin?

A. I would not have interpreted



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any alarm on the basis of that level.

THE COMMISSIONER: You said the level
was 2.6?

THE WITNESS: 2.6, yes.

THE COMMISSIONER: 2.6.

THE WITNESS: And it was at three and
a half hours after the dose.

Q. Now, my note is that the baby
died at 0300 on the 13th?

A. Yes.

Q. That would be between 21 and 22
hours after the digoxin administration?

A. Yes.

Q. Yes. Now, you have told the
Commission your opinion as to the cause of death of
this baby. Is there any evidence in this record that
would suggest to a reasonable cardiologist like
yourself that digoxin has anything to do with it?

A. No.

THE COMMISSIONER: I just wonder if
there are any unreasonable cardiologists?

MR. SCOTT: If there are, we're going
to meet them.

MR. STRATHY: We'll see some of them!

MR. SCOTT: Now, can we deal with



J3

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Baby Leith, who died, as I understand it, on March 6th, at 10:30 in the morning and who had been admitted on January 31st.

So, this baby had just been in the hospital about five weeks. At death, the baby was 42 days old. Now, subject to those facts being correct, can you summarize in a sentence or two, just to remind us of the nature of this baby's ailment?

A. This was a baby with a complete atrio-ventricular defect, meaning a major communication at both atrial and ventricular levels on a common valve. In addition had coarctation of the order for which there had been treatment, a small left ventricular and some degree of sub-aortic stenosis.

The condition was regarded as one in which it was very questionable whether survival would be possible but the initial operation was gone ahead with, with the hope that possibly that might not be true. And the baby came back to the ward eventually progressing poorly with continuing and worsening heart failure and because of the deterioration it was felt that there should be no act of resuscitation, so, in effect, a 'do not resuscitate' order was agreed upon by the family with Dr. Izukawa.

Q. Yes. Well now, I put this baby



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on the list because I understand that while -- first
of all, do I understand that digoxin was necessary to
this baby's life?

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A. Yes, digoxin was being
administered for that reason.

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Q. And that at least until March
the 2nd, the serum levels that were obtained
appeared to be lower than 2.5?

10

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A. Yes.

Q. Now, I raise the question about
this baby because on March 2nd, as I have it, there
was a serum level -- this is four days before the
baby died -- of the figure 2.8?

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16

A. Yes.

Q. Can you tell me what was
decided following the production of that serum level?

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A. I'm just looking to see
whether any action was taken. I think digoxin was
held because of a question I think in relation to
irregularity. I can't recall whether there was
irregularity of the heart beat or seizures but it was
one or the other.

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Q. All right.

A. And the digoxin was held for
that evening and to be reassessed.



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2nd?

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Q. That's the evening of March

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A. Yes.

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Q. Yes.

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A. And to be reassessed. No, I'm sorry, in the early morning of the 2nd of March until the digoxin level was known. So, for two days the digoxin was withheld.

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Q. And which two days are that, just so that we know?

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A. For the 3rd -- well, for the rest of the 2nd and the 3rd and it was started again on the 4th.

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Q. All right. Now, after it was started again was it started at a normal level, bearing in mind the nature of this patient's condition?

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A. It was started at a slightly lower level than before but not vastly different.

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Q. All right. Was a subsequent serum level taken?

A. No, the only level that was taken was one on -- I'm sorry, on the 5th there was one of 2.1.

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Q. All right. Now, that's pretty low.



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A. That's within the normal range.

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Q. Yes. And that's the day before

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the baby died.

5

A. Yes.

6

Q. Was a decision made about

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digoxin on March 6th, the very day of the baby's
death?

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A. Yes, the digoxin was withheld
again.

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Q. Let me ask you about this.

11

Would there have been a dose of digoxin between the
12 serum reading on March 5th of 2.1 and the determin-
13 ation to withhold it?

14

A. I can't see that here,
15 immediately.

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Q. Well, I don't want to trouble
17 you with it. I take it that on March 6th the decision
was made to hold the digoxin?

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A. I will have to look at the
19 notes, I'm sorry to delay you.

20

Q. No, no.

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A. Yes, hold the next dose of

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digoxin, and that was written at 6:15 on the 6th of
23 March.

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Q. And was any other digoxin, as

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far as the record reveals, given to the baby between that note and its death?

A. No.

Q. Was any serum sample taken between the one on March 5th and the baby's death?

A. No, not that I'm aware of.

Q. You have told us that digoxin was necessary for this baby's life. Why did you make a determination to stop the digoxin on the morning of March 6th, when your previous serum sample had been within normal ranges?

A. I'm not sure. I'm not sure of the reason for that decision. It was a decision made by the fellow in cardiology and the resident. The baby was worse and they wondered about pulmonary edema.

Q. Is that one of the causes that you and I talked about four years ago, or whenever it was that we began this?

A. Yes, yes. And I think that it is hard to read into the mind of the fellow what he was thinking about here. The potassium level was a little on the high side and that may have been the reason. The digoxin level he knew to be around 2.1, so, I think they just -- I don't know exactly why they discontinued with the digoxin but at that stage,



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they had made up their mind they weren't going to
resuscitate in any event. I'm not sure.

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Q. Well now, looking at the
death of Baby Leith on the record and with the
knowledge you would have had before Pacsai, is there
any evidence from which our reasonable cardiologist
would be concerned about the possibility of digoxin
toxicity contributing to death?

A. I don't think so in that case.

Q. All right. First of all, I
take it it was stopped at the critical time?

A. Yes.

Q. And the last reading had been
within the normal range?

A. Yes.

Q. Now, I'm going to ask Mr.
Ortved to deal with some other matters that I know
he wants to cover, and so, I will move right along
here.

MR. ORTVED: I guess I will cross-
examine then, Mr. Chairman.

MR. SCOTT: I'm almost finished.

THE COMMISSIONER: Yes. No, that's
fine. I think you had always threatened us with that,
Mr. Ortved.



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MR. SCOTT: Well, Mr. Ortved is going to deal with the Estrella post mortem and read in, I hope, some material and that was what I was going to do, so, he might as well do it, he's the master of that field.

Q. I just want to ask you one other short series of questions -- two other short series of questions, Doctor.

Were you asked to do some work for the Atlanta people, you know who I mean?

A. Yes.

Q. And will you tell the Commission what you were asked to do?

A. I was asked to make some estimate of the severity and the outlook for some patients that were selected by the Centre for assessment in a blind fashion.

Q. All right. Now, severity and outlook is something that we have been talking about here in relation to these 36 babies for three weeks, isn't it?

A. Yes.

Q. Yes. How many babies were you asked to assess?

A. Well, I can't remember exactly



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because I didn't keep records of these babies. I'm
sure I wasn't invited to keep records of those babies.

Q. No.

A. But I think that it started by
my getting a list of about 63 or so babies.

Q. Yes.

A. In which they wanted to test
something, I presume my consistency, or whatever, in
assessing things. And then I was given a much larger
list. In fact, Dr. Freedom also did that.

Q. Did he work with you on this?

A. He worked on this separately
and we joined forces on that.

Q. Yes.

A. But then I was asked to --
no, I think we did those independently and they were
assessed independently by the CDC. Then I was given
a very much larger --

Q. That was a little test, perhaps
to see how prompt you were in mailing in your stuff?

A. Yes, that's right.

Q. All right. Then did you get
the workload?

A. Then we got the workload. That
made me grow a little pale because it was a huge



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number of patients, I've forgotten what the number was.

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Q. Can you give us an approximate number?

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A. No, I can't remember but it took me hours and hours to do.

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Q. Was it a hundred?

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A. It may have been more than a hundred; probably was more than a hundred.

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Q. All right.

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A. I can't remember the exact number because I have no records left of that at all.

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Q. All right. And I take it you weren't given the names of patients?

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A. No. What I was given was a very limited amount of information that was a print-out, selected parts of a print-out.

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Q. Have you got one of those with you?

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A. No, I'm sorry.

19

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Q. Well, you showed it to me the other day.

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A. Yes.

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Q. Did I ask you to bring it with you?

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A. I don't know that you did.

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I'm sorry, I don't have it.

Q. You don't have it with you?

A. No. I will bring it, I will get it for you after lunch.

Q. All right. Well, I take it that you weren't told the names of these patients?

A. No, all that was on the information sheet was the age of the patient.

Q. Yes.

A. There were no dates. There was the age of the patient, there was a diagnosis.

Q. In one or two words?

A. Two lines of diagnosis, I believe.

Q. Yes.

A. And then there was an indication of any investigations that had been made, now not every investigation but some.

Q. Well, what, for example?

A. For example, there were some where there were some that had cardiac catheterization noted.

Q. They just said cardiac catheterization?

A. Cardiac catheterization.



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Q. They wouldn't tell you
anything about what it showed?

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A. No, no, no.

5

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Q. Was there anything else on
this little sheet for each baby?

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A. And I think there was an
indication if there was an operation.

9

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Q. All right. Did it tell you
what the operation was for?

11

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A. Well, it described the
operation, usually.

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Q. In how many words, two or
three words?

17

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Q. It would give you the name of
the operation?

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A. Yes.

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Q. And would it be correct to say,
we don't have it here, that there for what you had is,
you had the age, you had a diagnosis in one or two
lines?

A. Yes.

Q. You had the fact of a catheter



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being done and the name of the surgery if any was
done?

A. Yes.

Q. All right. And what were you
supposed to do with that?

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A. I was supposed to come up
with a severity status of the patient.

Q. Were you given any choices?

A. No. Well, I was given
choices in the way of three or four things. It was
rather similar to the New York Heart Association Code
but not quite the same.

Q. Were you given a series of
numbers and you had to pick one in the severity range?

A. Yes. I think it came in a
coding much like the other but not quite the same.

Q. Will you bring that sheet
this afternoon as a sample?

A. If I can. Now, I am not sure
whether that sheet is of the first 63 or whether it
is one that --

Q. I don't care about the
detail in the sheet. I take it the first 63 were
in form and information provided the same as the
subsequent bundle?

A. Yes, they were. I'm not sure
if the coding changed in any way but it still was a
coding somewhat similar to the New York Heart
Association.

Q. Were you comfortable performing



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K2 2 that exercise with that kind of information?

3 A. No.

4 Q. Why not?

5 A. Well, not really comfortable.

6 I was obliging the people who were investigating
7 because I felt they had decided this was something
8 they needed; that we should do it. But we were not
9 invited into the planning of that manoeuvre.

10 Q. Why were you uncomfortable
11 doing it?

12 A. Because of the limited
13 information that you would have available to make a
14 decision of that sort.

15 Q. I take it what you would
16 get would be four lines that would represent a file
17 or a record in your hospital that might be an inch
18 thick?

19 A. Or more.

20 Q. Just two other questions.

21 You know Dr. ^dNatas at Boston
22 Children's?

23 A. Yes, I do.

24 Q. And do you know Dr. Hastreiter?

25 A. Yes, I do.

26 Q. And they are both cardio-
27 logists?



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A. Yes.

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Q. You are aware that Dr. Natas has done some work for the Atlanta group?

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A. Yes.

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Q. And you are aware that Dr. Hastreiter has done some work for, I'm not sure who, the Crown Attorney at least?

8

A. Yes.

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Q. We have asked Mr. Lamek to produce -- and I think you know Dr. Natas was asked to evaluate with respect to two phases a number of patients?

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A. Yes.

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Q. We have asked Mr. Lamek, and of course it is not his fault but he hasn't yet been able to provide any information or any detail as to what Dr. Natas had before him when he made those evaluations. You have given your opinion about these deaths. Are you in any position, the information state being what it is, to express an opinion about Dr. Natas' work?

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A. Not without, I think, having more detail as to how he planned and analyzed his material.

Q. You respect his opinion as a



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cardiologist?

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A. Oh, yes, of course.

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Q. Would you like to hear what
he has to say in support of his conclusions?

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A. Yes.

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Q. Would you feel free, after
that, to comment on them?

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A. Yes.

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Q. Now, how about Dr. Hastreiter?
We have received, I think, a page or two of Dr.
Hastreiter's conclusions in each case.

11

12

A. Yes.

13

Q. Have you seen that?

14

A. Yes.

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Q. Do you feel competent, on the
basis of that material, to deal with individual
cases about which Dr. Hastreiter has drawn a con-
clusion or do you want to hear what he says?

18

A. I would like to hear what he
says, too, for the same reasons, I think.

19

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MR. SCOTT: Excuse me, Mr. Commis-
sioner.

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THE COMMISSIONER: Certainly.

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MR. SCOTT: On the assumption that
Mr. Ortved, as I expect, covers everything, those are

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my questions.

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I want to thank you, Dr. Rowe, for
your patience and you, too, Mr. Commissioner.

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THE COMMISSIONER: Thank you, Mr.
Scott.

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MR. STRATHY: Just before Mr.
Scott finishes, do I understand correctly that he
does want to go back to the graph when it returns to
us on Monday or Tuesday?

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MR. SCOTT: Well, it may not be
necessary. I don't want to ask any other questions
about it. I tried to ask some questions this
morning with the paper graph and I don't think there
is any virtue in repeating those questions.

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MR. STRATHY: I wonder, is there
any chance we can get copies of the paper graph to
take away with us this weekend?

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MR. SCOTT: I will happily lend
you mine if you are next in the cross-examination list,
if that is all right, and we will certainly have the
colour copies by Monday.

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MR. STRATHY: That would be helpful.

THE COMMISSIONER: Yes. All right.

Mr. Ortved, do you want to go now
or after lunch?



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MR. ORTVED: I prefer to go after lunch if it will suit you, Mr. Commissioner.

THE COMMISSIONER: Yes. All right. We will rise until 2:30 and perhaps at that time, if this missing list is -- some missing document --

MR. SCOTT: Well, there are two documents that are to come from my examination. The first and the least important is a sample of what Dr. Rowe got from Atlanta. The second is, and he may have the weekend to work on this, his characterization of the 36 people in the light of the 14 potential causes for cardiac stoppage.

THE COMMISSIONER: Yes.

MR. SCOTT: Are you with me, Dr. Rowe?

THE WITNESS: Yes, I am afraid I am.

THE COMMISSIONER: Then until 2:30.
--- luncheon recess.



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---Upon resuming at 2:30 p.m.

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THE COMMISSIONER: Yes, Mr. Shinehoft,
I understand you have some comments you wish to make.

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MR. SHINEHOFT: Yes, Mr. Commissioner.
I was wondering if I could speak to the Commission
about what is going to happen as far as, particularly
after Mr. Ortved has concluded his so-called cross-
examination by him of this witness, finally in the
context, Mr. Commissioner, of what purpose counsel
may have as far as interviewing witnesses and as far
as preparing a witness.

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Now normally my understanding in a
trial in a civil or criminal matter once your own
witness takes the box and once he is subject to cross-
examination you as his counsel are not permitted to
speak with him, or discuss the contents of the
questions that are being raised.

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My question to the Commission is
will such restriction be imposed by the Commission
as far as the Hospital's counsel and as far as the
doctors' counsel is concerned after Mr. Ortved has
finished his cross-examination.

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THE COMMISSIONER: I could have my
mind changed, but this matter was raised in
Mississauga and I decided that it wasn't appropriate

/DM/ak



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2 to make any such orders in a Commission of this
3 nature, and in fact I wasn't even sure I have the
4 authority to make such an order. So I don't
5 ordinarily unless something, or somebody has some-
6 thing to say and I don't see any reason, the witness
7 doesn't have to speak to you if he doesn't want to,
8 but if he wants to speak to you as long as you like,
9 it is all right by me. I can't help somebody wanting
10 to put something to me, that they had a great long
11 discussion with you about this matter before or
12 something like that. I am certainly not going to
13 impose any obligation upon you. You have the right
14 to speak to witnesses, your own witness, or anybody
15 elses witness at any time, at any point in the cross-
16 examination. I would rather you didn't do it right
17 in the middle of his examination, that might be
18 improper.

17 MR. SHINEHOFT: It would appear
18 then that this is somewhat different than the
19 normal court.

20 THE COMMISSIONER: This is as about
21 as far away from the ordinary trial as one can get.

22 MR. SHINEHOFT: I am sure,
23 Mr. Commissioner, and I mean no disrespect whatsoever
24 to both counsel who are involved and in whom I have
25



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2 the utmost respect for but potentially it could lead
3 to some terrible problems as I perceive it.

4 THE COMMISSIONER: There's no
5 restriction on anyone's conversations with any witness
6 at any time. Now, I don't know, as I say, my mind
7 can be changed on that, if anybody feels strongly
8 on it, the other way.

9 MR. SHINEHOFT: I just raise
10 this concern on it, Mr. Commissioner. There was
11 concern, and I just wanted to lay the foundation
12 because I can envisage certain potential problems.

13 THE COMMISSIONER: One of the
14 problems we have is the fact any witness who takes
15 the stand seems to be there for some considerable
16 time and it would be impossible to police it to
17 begin with. But I don't think it is the same, it is
18 not quite the same, because this is not really an
19 adversary process, this is an investigation, an
20 attempt to reach - in theory I can go out and get
21 information from a man on the street without even
22 telling you that I have got it. It is not what I
23 consider a fair way to conduct an investigation but
24 there is nothing to prevent me going out and asking
25 what he thinks is the answer to this thing, a layman's
interpretation of it.



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2 MR. SHINEHOFT: I appreciate that,
3 Mr. Commissioner. I guess it is from my training
4 and experience as an advocate, the normal function in
5 a normal procedure that is followed in cross-examination
6 of a witness, and that is why I raise this matter.
7 Again I mean no disrespect to Mr. Scott or Mr. Ortved,
8 I feel it is a matter the Commission should address
9 itself to.

10 THE COMMISSIONER: Well, I think
11 that it goes to the credibility of the witness and
12 I invite you to raise it at any time if you want to.

13 MR. SHINEHOFT: Thank you very much.

14 THE COMMISSIONER: Unless somebody
15 persuades me otherwise.

16 Now, the next thing is about Monday.
17 Mr. Strathy, I think it is you, you have a problem,
18 are you not able to proceed on Monday?

19 MR. STRATHY: I am sorry to be
20 the first one to say this, but there are others who
21 will say the same thing, but it does create diffi-
22 culties for me, not absolutely insurmountable
23 difficulties. I was simply going to suggest from
24 my point of view I would be agreeable to starting at
25 9:00 sitting until noon and reducing the lunch hour
to an hour, but as I say I gather that there are



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2 others who share my difficulty with Monday afternoon
3 in any event.

4 THE COMMISSIONER: I don't know
5 what anybody else feels about 9 o'clock in the
6 morning.

7 MR. SCOTT: I would like to object
8 to it, it is like being in prison, the only way to
9 survive in prison is by establishing certain rules,
10 civilized rules that permit you to carry on. I would
11 much rather sit a fourth day than to sit, sir, from
12 9:00 to 6:00 with a sandwich for lunch. We all have
13 other work to do and it seems to me we are all engaged
14 in cross-examination, and an hour at the beginning
and end of the day is very important for us.

15 THE COMMISSIONER: And what is more
16 it is really sort of beyond me, and if the hours are
17 extended, and the last couple of hours I won't be
18 able to take things in as well as I would like. We
19 will leave it at that and when we go on to four
20 days and perhaps eventually five days, but if it is
going to be difficult next week for you.

21 MR. STRATHY: It is my understanding
22 that others have the same strong feeling.

23 THE COMMISSIONER: How many others
24 find it difficult?
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3 MR. OLAH: Mr. Commissioner, I have
4 some problem understanding, my understanding was this
5 proceeding would be going to Labour Day and I have a
6 trial on Monday and I would be most grateful.

7 THE COMMISSIONER: It was just a
8 thought. I know Mr. Percival has also indicated he
9 has some problem. So I think we will forget about it
10 for Monday, but I want to warn you now, it is near
11 Labour Day, and when we return after Labour Day, on
12 the 12th of September, we will be sitting on Monday
13 the 12th of September and I think apparently there-
14 after, so if you can plot accordingly. The Friday,
15 the boom has not yet been lowered on Friday, but you
16 can expect at this time it will come as we get mired
17 deeper and deeper. Well, all right. Then at the end
18 of today's proceedings we will rise at 4:30, I don't
19 know where we will be at at that time, but we will
20 recess at 4:30 this afternoon until 10 o'clock next
21 Tuesday. Yes, all right.

22 Now Mr. Scott, did you want another
23 moment?

24 MR. SCOTT: No, I asked Dr. Rowe
25 to bring that document next week.

THE COMMISSIONER: All right.

MR. SCOTT: And it may be put in



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2 evidence at that time.

3 THE COMMISSIONER: All right,
4 Mr. Ortved.

5 MR. ORTVED: Thank you,
6 Mr. Commissioner. I can indicate I am sure to your
7 pleasure, Mr. Commissioner, as well as everyone else
8 here that by virtue of Mr. Scott's very comprehensive
9 examination I will be very much shorter.

10 THE COMMISSIONER: All right.
11 EXAMINATION BY MR. ORTVED:

12 Q. Dr. Rowe, you will recall
13 that in the course of Mr. Lamek's questioning of
14 you, you were directed on a great number of occasions
15 to the fact that a number of the babies with which
16 we are here concerned died of symptoms of bradycardia,
17 irregularity, and on occasion ventricular fibrillation,
18 do you recall that?

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22 A. Yes.
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Q. And I think I am not doing any violence to Mr. Lamek when I suggest to you that those questions were placed in a context which would suggest that those may be symptomatic of digoxin intoxication.

A. Yes.

Q. Now, Mr. Scott in his cross-examination commenced I think you will recall with a number of alternative causes of death other than simple digoxin intoxication or congenital heart disease. Do you recall that?

A. Yes.

Q. And in responding to him you indicated again that on a great number of occasions that bradycardia, irregularity and sometimes ventricular fibrillation may be characteristics of those modes of dying.

A. Yes, I did.

Q. Is that fair? And would that pertain to children in particular?

A. Yes, especially children.

Q. On what do you base your views in that regard?

A. Well, that is the common experience of observations that we have made of



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2 patients dying with congenital heart disease
3 particularly, where our experience rests.

4 Q. When you say "our", you're
5 referring to you and your fellow cardiologists?

6 A. Yes, or pediatric cardiologists
7 generally I think have had that impression.

8 Q. And in addition to your
9 impression about which you have just told us, is
10 there literature in this regard?

11 A. Yes. There is interestingly
12 enough only one paper on the subject and it is quite
13 recent.

14 Q. And is that paper entitled
15 "Terminal Cardiac Electrical Activity in Pediatric
16 Patients"?

17 A. Yes, that is the paper.

18 Q. By a number of authors to
19 be found - actually I don't have the citations but
20 I have a copy of the article. Do you have a copy
21 where it is from?

22 A. Yes, it is from the American
23 Journal of Cardiology, Volume 51, pages 557 to 561,
24 and 1983, February.

25 MR. ORTVED: Now, Mr. Commissioner,
I'm going to ask that a copy of this article be made



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the next exhibit and I have copies of it for the
various counsel.

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THE COMMISSIONER: Exhibit 134.

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---EXHIBIT NO. 134: Copy of paper entitled
"Terminal Cardiac Electrical
Activity in Pediatric Patients".

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MR. ORTVED: Q. Do you have a copy,
Doctor? I had 20 copies of that, are there any extras
in the room? I see I have given away my own copy.

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Now just dealing with that article
if I could read the abstract, Dr. Rowe, and you know
it well and you can assist me as to whether that
accurately summarizes the article. It reads:

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"Ventricular fibrillation is a frequently
reported terminal cardiac electrical
activity in adults. Such data are
unavailable for pediatric patients.
Terminal cardiac electrical activity
determined in 100 pediatric patients
was bradycardic arrest throughout
the death process in 88% of newborns,
67% of infants, and 64% of children.
Although bradycardic arrest was more
common, the incidence of ventricular
tachyarrhythmias was higher in patients



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"who had congenital heart disease, who had received cardiopulmonary resuscitation, who were beyond the neonatal period, and/or who weighed 2.23 kilograms. No definite associations could be established between arterial blood gases, electrolyte values, and type of terminal cardiac electrical activity. The development of ventricular fibrillation may be related to cardiac mass and the developing autonomic nervous system and therefore is less likely to occur in patients with a small heart."

So firstly is that an accurate abstract of what the article says?

A. Yes, it is.

Q. And is that - is the information contained in that abstract in accord with what you just told us is your experience?

A. Yes, it is.

Q. And in particular you have told us that of the patients in the sample a number suffered from congenital heart disease; is that correct?



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A. In the paper?

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Q. That is right.

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A. Yes.

5

Q. And you have indicated that

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in that paper the numbers are one-third of the new-

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borns suffered from congenital heart disease, one

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half of the infants and fully 70% of the children

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in the samples; is that right?

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A. That is it.

11

Q. Now because I think it may

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be instructive and because the information about

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which you have told us up to this point in time is

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really just to be found in descriptions and charts,

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I understand that on page 2 of this article there

16

are illustrations of strips which would indicate

17

firstly at the top right hand corner of page 2 a

18

bradycardic arrest. Is that correct?

19

A. That is correct.

20

Q. And can you just assist the
Commissioner and counsel here as to what is illustrated
in those four strips?

21

A. Yes. They are labelled as

22

you can see A, B, C, D. This is on the top of page

23

558 on the right hand side, Figure 1, and this is a

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five year old child who died from smoke inhalation.

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The top strip is one showing tachycardia but with a sinus rhythm. It is a fast rate of somewhere around about 160 or more per minute. It says I think 200 it says there. Yes, I suppose that is fair enough, 200 a minute.

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And then the next section, Section B shows the heart rate very much slower. That is about 60 beats a minute.

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Q. That would be referred to as bradycardia?

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A. That would be bradycardia, and there is --

THE COMMISSIONER: What is the beat?

THE WITNESS: The beat is --

THE COMMISSIONER: I understand what it is of the heart, but what is it on the --

THE WITNESS: On the electrocardiogram? The very tall thin blip is the ventricular activations so that - the electrical signal for the ventricle - so that would be the equivalent of the ventricular activity.

In the second tracing you can see that blip again. It is very tall and thin. The wider peak is the T wave, the terminal part of the ventricular activity, and the very short blip just



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3 in front of the spike of the ventricular complex
4 that you see on the left hand side of each complex is
5 the atrial activity.

6 So in the top one there is atrial
7 activity, ventricular activity of a normal type
8 except that it is a fast rate.

9 In the second one it shows a much
10 slower rate, at 60 a minute, with no other major
11 change.

12 And then C is a complete heart block.
13 That is there is a dissociation between the sinus
14 node and the bottom chamber. It is just as though
15 you had sectioned the bundle of His and you have just
16 got the top chamber. You can barely see it beating,
17 and it is beating out of phase with the Q.R.S.
18 blip, the ventricular blip, and the ventricular blip
19 is very slow. It is extremely slow. That works out
20 at about 20, 30 beats a minute.

21 Q. Do we see in that strip C
22 what has been referred to here as block?

23 A. Yes, that is heart block.
24 The blips from the ventricular are the ventricular
25 rate operating on its own at a slow natural rhythm
that is quite separate from any atrial activity.

Q. All right.



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A. And D is a very slow terminal complex again in the presence of block, but with a very wide ventricular component. You see it is extremely wide, and that indicates a block even further out in the system at the point where the conduction system communicates directly with the muscle.

So this is a rapid rate at the start, tachycardia, which begins to slow and then develops heart block, and it is during that phase, although they don't show it on this record, with a very slow rate that you may get ectopic rhythm as well, but that is what they describe as a typical bradycardic arrest.

Q. All right. And how does that correspond to what your experience is a typical bradycardic arrest?

A. I think that is very characteristic of it.

Q. And then also and perhaps briefly the series of strips on the bottom right hand corner I understand that demonstrates ventricular fibrillation about which we have heard so much?

A. Yes. Now this is not a record in which they have captured the regular rate



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and then gone to fibrillation. This is a record in which they have done - in a child with congenital heart disease they have entered - they have taken the strips at the phase where there is ventricular fibrillation present after they have started resuscitation.

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So A there shows this highly irregular different form, wave form, blips which are characteristic of ventricular fibrillation and they say that the rhythm deteriorates towards ventricular fibrillation towards the end of the strip. This is D. They say after resuscitation you have got ventricular complexes. Those are those blips in D and then it deteriorates again into ventricular fibrillation.

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And even when they defibrillate, when they defibrillate with electrical conversion down in C the ventricular fibrillation pattern stops, but there is no beat resumed. So that the heart has completely arrested at that point.

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Q. And defibrillation just because I don't know whether that has been explained, that is basically shocking, hopefully shocking the heart back into sinus rhythm.

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A. Yes, it is an attempt to get rid of a very rapid rhythm whether it is regular or



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irregular in order to restore normal sinus activity.

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THE COMMISSIONER: Just speaking
for myself I would find it easier to understand if
we had a normal heart beat somewhere. I don't know
whether that is available.

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MR. ORTVED: We will have to get
the advertisement from the Heart Foundation that
appears on the TTC.

9

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THE COMMISSIONER: Well, if we had
it to compare.

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MR. ORTVED: We can provide that.

THE COMMISSIONER: I think I could
better understand.

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THE WITNESS: I will put that on
my weekend's list.

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THE COMMISSIONER: Well, it is
the first I have done this. It would help because...

18

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THE WITNESS: Yes.

MR. ORTVED: Thank you, Mr. Commissioner.

20

Q. Then - I don't want to
interrupt you in the course of making your notes there.

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Turning to page 3 of the article,
actually page 559 of the Journal, there is, as I
understand it in Figure 5 the bottom left hand corner,
a breakout of the patients suffering from cardiac



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defects. Is that correct?

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A. Yes. Congenital heart

4

disease.

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Q. And in particular the left

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hand bar graph, as I understand it, breaks down those

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patients in terms of terminal activity experienced

8

by them?

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A. Yes. It shows two groups of

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patients who have congenital heart disease and those

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with other diagnoses, and the one on the right, that

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is the one they refer to as non-cardiac.

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Q. Right. Dealing with the bar representing the cardiac patients, there are three separate delineations. One is bradycardic arrest, one is tachyarrhythmia to bradycardic arrest and the last is ventricular fibrillation; right?

A. Yes.

Q. Just dealing with that separate category of tachyarrhythmia to bradycardic arrest, are you able to assist us as to how that is to be distinguished from bradycardic arrest?

A. Just by the fact that some of those patients may start with tachycardia.

Q. Right.

A. Like that patient featured in Figure 1, I think.

Q. That you describe as a typical bradycardic arrest?

A. Yes.

Q. So, in fact, if we were to look at that graph in terms of a bradycardic arrest as opposed to ventricular fibrillation, would it in fact read 87 per cent suffer bradycardic arrest and 13 per cent ventricular fibrillation?

A. I think that would be a reasonable way. You could divide it up in a number of



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ways, but I think that is probably fair.

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Q. Now, at our request - and we have seen it in certain of the exhibits that have been tendered already - did you go through the 36 patients with which we are here concerned and break them out in terms of whether the arrest described in the Hospital record was bradycardic or in the nature of ventricular fibrillation?

A. Yes, I did that. We can't do it exactly the same way. This was a study specifically designed to collect all, or to capture all, the electrical events from anybody who arrested. In most hospital circumstances, that would not be done because they don't keep a recorder running and recording on paper or tape for the entire procedure; they watch on the monitor and they record strips from time to time. But the record would, in our case, be very incomplete by comparison to this type of examination.

So that with that reservation, and dealing with descriptions from what is available in the chart - the record, I'm sorry, what is available in the record, the medical record, then this was the assessment I made.

Q. And did you at our request collate those and total them for us?

In Ex 134, combined $\frac{1}{2}$ bradycardia, tachy-brady
were 87%

In Ex 135 (in Run 36) 75% (per Row) were
brady w/o vent fibr^{ls}



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A. I did.

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MR. ORTVED: All right.

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I am going to ask that that be the
next exhibit, Mr. Chairman.

5

THE COMMISSIONER: Exhibit 135.

6

--- EXHIBIT NO. 135: Collated totals, 36 patients.

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MR. ORTVED: Q. Can you just
assist us as to those respective 36 patients totalled?

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A. Well, there was one patient
on whom we don't have sufficient information to make
a decision. There are 27 with the bradycardia alone
as far as I can judge and there were eight in whom
there was ventricular fibrillation at some part of
the record, usually preceded by bradycardia but in
two instances it was the initiating event.

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Q. And having regard to the
reservation that you have already given us, how does
that compare to what might be expected having regard
to the article found in the American Journal of
Cardiology?

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A. I think it would be along the
same lines. I think there are some differences but
not big ones.

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Q. So, in terms of whether or not
there is any significance to the terminal events with

WHAT ARE
THEY?



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CC4 2 which you went through with Mr. Lamek, is there any --

3 A. No.

4 Q. Is there anything about the
5 terminal events that you went through with Mr. Lamek
6 that would tend to incline you towards digoxin
7 intoxication as opposed to any of the other causes,
8 among them being those you went through with Mr. Scott,
9 or just the anatomical defect?

10 A. No.

11 Q. Now, what I would like to
12 do, Dr. Rowe, is go to the meetings that you have been
13 through in some detail - I won't spend a long time
14 on them I hope but to review them again and perhaps
15 from a little different perspective.

16 I am dealing with the meetings you
17 held with the other members of the staff in the
18 Hospital on September 5th and September 26th of 1980
19 and on January 12, 1981.

20 A. Yes.

21 Q. Now, dealing with the first
22 meeting, September 5, 1980, I think you told us earlier
23 that that meeting was called at your instance with a
24 view to allaying the concerns on the part of nurses
25 about the number of patients who were dying; is that
fair?



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A. Yes.

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Q. You have already told us more than once that those deaths had been reviewed individually; correct?

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A. Yes.

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Q. And was there anything in those deaths individually that raised any alarm as far as the staff were concerned?

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A. No.

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Q. Aside from perhaps Velasquez and Woodcock, about whom you have told us were referred to the Coroner; right?

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A. That's right.

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Q. And in particular, in terms of the nursing care afforded those patients - and we are dealing now with the patients that died in July and August - what was your view as to the quality of that care?

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A. The quality of that care was excellent.

20

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Q. Did that enter into your decision to meet with the nurses to allay this apparent concern they had?

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A. Yes.

Q. And what was the purpose of



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CC6 2 the meeting? How were you going to allay their
3 concerns?

4 A. Well, we wanted to discuss
5 the cases that had died, or some of the cases anyway,
6 in July and August and we selected examples of babies
7 where we could clarify with the nurses the way in
8 which these babies had behaved and why they died.

9 Q. And in terms of your view as
10 to why they had died, what was that?

11 A. We felt they had died from
12 the severity of their disease process.

13 Q. Right.

14 Now, there are two meetings,
15 September 5th and September 26th. We know there were
16 six infants discussed. Are you able to recall
17 whether the six were chosen with a view to presenting
18 them at the first meeting or there were three chosen
19 and then a second meeting was convened and three more
20 chosen? Are you able to recall?

21 A. I can't remember. I think it
22 is unlikely -- we got through the list we made for
23 the first conference because there were only three
24 but I cannot remember whether we made the list
25 complete at the beginning or later.

Q. All right.

Then you have told us already that



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you chaired the meeting.

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A. Yes.

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Q. And we know from Exhibit 46,

which are the nurses' notes apparently made at that meeting of September 5, 1980, that it would appear that you introduced the first meeting talking about the experience in the Cardiology Division with the approximately 100 deaths a year.

A. Yes.

Q. Do you recall doing that?

A. Well, when it was put to me

earlier from my own minutes, I couldn't recall that but, when I saw the notes that I think Nurse Radojewski has made, I was persuaded that is what I did, and that would make sense to me.

Q. In terms of that number, where would you have gotten that number?

A. Well, as I think I have said before, we look at the deaths on a sort of annual basis, or cardiac deaths in the Hospital.

Q. All right.

You don't have the graph that is out being reproduced, but you have made it clear that that is not deaths just on the ward but all cardiac deaths on all wards.



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A. Yes, it would be all cardiac deaths within the Hospital.

Q. And just dealing with those deaths, we can see from the graph that does remain here - I forget the exhibit number - Exhibit 128 - that those deaths can fluctuate substantially month-by-month.

A. Yes.

Q. Just looking from my own vantage point here at, for instance, February 1977, I see we are at about seven, and March of 1977, it is six; whereas, in April 1977, you go up to, I would say, thirteen. Is that fair?

A. Yes.

Q. So, you can get these very large fluctuations in number, is that correct?

A. Yes, yes.

Q. And dealing with the deaths that you are reviewing at the September meetings with the nurses, we know what those numbers were for July and August. Were those higher than was the usual experience in the division of cardiology, the ward?

A. On the ward, yes.

Q. And was that a matter of concern for the staff, the medical staff?



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A. Well, death is always a matter of concern for the staff, but the babies that we were discussing here were of a degree of severity that the concern was allayed.

Q. All right. And what was the perception of those numbers experienced on the ward being out of the ordinary, as they were, having regard to the experience that you all have as cardiologists?

A. Not remarkable.

Q. Now, the meetings, I think you have told us and I don't think anyone will object to my leading, were, from your point of view, summarized in Exhibits 45 and 51, your minutes of the two respective meetings; is that fair?

A. That's right.

Q. And dealing with Exhibit 45, do you have a copy of your minutes of the September 5th meeting?

A. Yes, I do.

Q. In the last paragraph of those minutes it is indicated nevertheless, it was pointed out that in all the cases described here the anatomy was extremely severely disturbed, the risk of any intervention was very high and that this is influencing



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the course of events in the type of patients we are
now seeing.

Do you see that portion?

A. Yes, I do.

Q. Was that discussed at that
meeting?

A. Well, we had had discussions,
I can't remember all the details of what was said,
but there were comments that we made after each case
and I believe that the severity of the malformations
was nearly accounting for most of our explanation.
Nevertheless, there were a couple of patients where we
questioned whether the babies, despite the very
severe prognosis, might have been better handled in
an intermediate Intensive Care setting.

Q. Right. I am going to come
to that, but just dealing with the general characteriza-
tion of "extremely severely disturbed anatomy", was
there any contest that you recall to that interpreta-
tion on the part of those making the presentation?

A. No, no, I don't believe so
and particularly here the question was that from the
nursing point of view their concerns I believe were
that they were fighting to save the babies and they
felt frustrated that they weren't able to bring them



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Rowe
ex. (Ortved)

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2 through, and I think this type of conference for them
3 was helpful because it indicated in a way to them
4 the thinking that we had about the malformations and
5 what was revealed by the investigations and what,
6 in retrospect, we thought about the outcome and so on.
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So I think the purpose of that meeting, insofar as the nurses were concerned, was probably satisfied, but we did discuss a lot of things in connection with these infants, including ways in which we might handle things and management questions; different things.

Q. Now, you have told us the purpose with which you went into those meetings and, having regard to the nature of the discussions at those two meetings, did you come away from them with a view, an altered view as to the usefulness for the staff as opposed to just explaining things to the nurses who might have some outstanding questions?

A. Yes, I think we did.

Q. And what was that?

A. We felt that the exchange of information that occurs under those circumstances was beneficial. We don't always have the input from nurses in death conferences. There may be a few people there but not as many as we were able to have at those two conferences. So that, I certainly had the feeling that this was a fruitful way of exchanging information about the concerns and problems and management.

Q. The item you mentioned a few moments ago concerning the concept of an inter-



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mediate ICU, was that one of the fruitful items that came out of the exchange?

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A. Yes, I think so.

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Q. Now, just dealing with this intermediate ICU for the moment, what was it envisaged such a unit might be able to provide?

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A. Well, we had the feeling that it might be expected that, with that type of unit, it would be possible to do more detailed monitoring of patients' conditions through additional equipment and so on and, of course, as well, it would provide a larger density of nursing supervision.

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Q. Now, in the next-to-last paragraph, the penultimate paragraph of Exhibit 51, your minutes of the meeting of September 26, one of the items listed under "Conclusions" is that this concept of an intermediate ICU is one that ought to be explored; is that right?

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A. Yes. I don't think, at that stage, we had come to an absolute conclusion about this. We had our feelings about it and thought it would be worthwhile getting together with nursing and trying to work out the pros and cons of such a unit.

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Q. And what was your impression,



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to the extent you are able to recall it, going back to September 26th, as to the reaction on the part of nursing to such a concept at that point in time?

A. I think it was positive at that time.

Q. Now, because of a number of questions put by Mr. Lamek in the course of his examination-in-chief concerning monitoring and what might be accomplished in a unit described as an intermediate ICU, we have heard from your evidence and from the record that, for instance, monitoring is available on the ward prior to the introduction of any intermediate ICU; is that right?

A. Yes.

Q. And when you see the word "monitoring", what is usually being referred to?

A. It is usually an electro-cardiographic monitoring.

Q. In fact, Mr. Lamek has indicated that if closer supervision is what is sought, it is open to the doctors to order constant care nursing; is that so?

A. Yes, that is so.

Q. Now, did the intermediate ICU that was contemplated as of the fall of 1980, was



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it designed to accomplish anything more than electro-
cardiographic monitoring and closer supervision?

A. Well, it would -- detail
of monitoring would be expanded. That is, I think
in our thinking at that time we wanted to extend the
monitoring from just the electrocardiograph and we
wanted to --

Q. Can you give us some
examples of what we are talking about, because it
seems to have created some confusion up to this point
in time?

A. Well, there are additional
things that one can monitor. The rate of breathing
as well as the heart rate, the blood pressure and the
venous pressure by various invasive lines. That is,
measurements of pressure that are obtained from
blood vessels.

Q. I see.

A. That was one. The possibility
of measurement of oxygen tensions and carbon dioxide
tensions on a more frequent basis through arterial
lines is real and possibly through what is called
transcutaneous measurement of oxygen tension.

We hadn't formulated precisely what
things would go into that unit at that stage, if we did



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get such a unit, if it was approved or if it was agreed to, but that point hadn't been reached. Those were the sort of things we were thinking about, a considerable extension of what is possible on the ordinary ward.

Q. And apnea monitor is a description of a monitor that I have heard. Was that another type of monitor that might be considered?

A. Yes.

Q. And dealing with all those items of equipment, or forms of monitoring that you have enumerated, were those generally available on the ward as of the fall of 1980?

A. No.

Q. Then I guess, insofar as supervision was concerned, was it envisaged that such a unit might involve additional nursing staff?

A. You would have to involve nursing staff especially trained in that particular additional area, particularly if arterial lines and that sort of thing were involved.

Q. I see.

A. So, really, it requires a

They were available in this ward!



Rowe
ex. (Ortved)

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2 a period of -- it requires people who have had Intens-
3 ive Care Unit training or some tuition by that group
4 of individuals.

5 Q. Then, also, going to
6 Exhibit No. 51, your minute of that September 26th
7 meeting, you indicated in the final paragraph that
8 the reviews would continue and Dr. Jedeikin would
organize the ensuing meeting; correct?

9 A. That is correct.

10 Q. And we have heard in your
11 evidence that you went out of the country and that
12 was not done.

13 A. That is correct.

14 Q. However, as I understand it,
15 the idea didn't die on the vine because, if I could
16 direct you to your letter which is part of Exhibit
17 No. 64, your response to Dr. Trusler, dated December
29, 1980 - do you have a copy of that letter?

18 A. I have the Trusler letter
19 but, somehow, I don't have my own.

20 Q. You indicated in that letter,
21 in the fourth paragraph, the following passage:

22 "The other question was in relation
23 to the perceived need of an inter-
24 mediate Intensive Care Unit on
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4A/B. It is my feeling that such a unit should be seriously considered, particularly since most of the patients we are talking about are small infants at relatively high risk from respiratory arrests and probably who need a much higher nurse/patient ratio than is currently provided at nights on that ward. Whether this should be officially tied in with the ICU proper and have staff attachment from that ward is a matter for further discussion. I think that the provision of such a small unit might offer a solution to some of these problems and that its formation should be seriously considered at this stage."

Do you recall that passage?

A. Yes, I do.

Q. So, going to your return in December and your review in December and, in particular, your response to Dr. Trusler, was this an idea that, insofar as you are concerned, was gaining ground?

A. Yes.

The 2d circle! Deaths occurred at night;
because not enough nurses at night;
need more nurses at night because
that's when the deaths were occurring!



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Q. I am interested in your reference in that paragraph in that letter, the reference to the nurse/patient ratio, "a higher nurse/patient ratio than is currently provided at nights on the ward". The reference to "nights", why "nights"?

A. Because of the fact that there had been many of the deaths at night.

Q. Now, I am not going to review at any length your preparation for the review done in December but just dealing with the next meeting, the January 12, 1981 meeting.

Firstly, can you advise the Commissioner as to the frequency with which such a meeting might take place?

A. That would be an extraordinary meeting.

Q. In terms of your experience as a cardiologist, how often would such a meeting have been convened?

A. That sort of meeting, well, that sort of meeting might have been held -- we might have held a similar meeting when we were planning the ward, the reconstruction of the ward or something like that, but it would be very unusual for us to meet in a

Presumably the unusual mtg was held
because the situation (death rate)
was unusual!



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small group with senior staff to talk about something of this sort.

Q. And in terms of the persons asked to be present or who did attend that meeting, included among which were the Director of Nursing, the Nursing Coordinator, Dr. Edmunds and the cardiovascular surgeons. Again, can you assist us as to the frequency with which that sort of a group, that sort of expertise, might be brought together?

A. On a non-regular basis, you mean, unless there was a hospital committee for some other reason. This was not a hospital committee as such; it was an ad hoc meeting. It would be very uncommon.

Q. In terms of the review that was conducted in preparation for that meeting - and I have already said I don't intend to go through it - can you just assist us as to was this an overnight affair? What sort of effort went into it?

A. Well, we thought a large amount of effort went into that review and it took a long time to get it all together, for the reasons I have said before. It is much easier to conduct a review a year later and get in all the records and everything together than it is to try and complete a



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review as you are finishing the six-month period.

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Q. Now, I just want to ensure that we are all on the same wavelength and dealing with Exhibit No. 65. That Exhibit No. 65 consists of the minutes of the meeting, which you compiled, I guess, obviously after the meeting of January 12, 1981?

A. Yes.

Q. And then goes on to contain a page entitled "Sequence of Deaths of 4A/B Management Codes" and a "Summary".

Now, do I understand correctly that, in anticipation of this meeting, there was a handout that went out to the various people asked to attend?

A. Yes.

Q. And who prepared that?

A. I prepared that after working it out with the people involved in helping me do it.



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Q My understanding is that that handout contained the last three pages of Exhibit No. 65 plus an agenda of another page; is that correct?

A Yes. The other page concerned a statement about the numbers of patients who had died in the Operating Room or in the Intensive Care Unit after operation.

MR. ORTVED: All right. I just think that as a matter of housekeeping I should ensure that that is properly reflected in the record, Mr. Commissioner.

I see with my faulty organization, I haven't copied the agenda which I will undertake to do, but I do have copies of the additional page that was part of the handout. Perhaps that should be made part of Exhibit No. --

THE COMMISSIONER: 65? Make it 65A.

--- EXHIBIT NO. 65A: One page document entitled: Deaths on Cardiological Ward, July-December 1980.

THE WITNESS: May I interject just one thing; for reasons that are not entirely obvious but because probably we had difficulty in obtaining all the Operating Room and Intensive Care information as easily as the stuff on the ward, that page is not terribly accurate. I have had to revise it extensively



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in terms of the ages of the patients and in terms of
the total number of patients.

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MR. ORTVED: Q. All right. But the
page that we have just tendered is part of the handout
that went out to the people who attended the meeting?

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A. That is right.

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Q. And the agenda which my colleagues
here may or may not have, it is very short. It is
entitled "Discussion of Cardio-surgical Mortality
with Special Reference to Deaths on 4A/B, Luncheon
Conference, Monday, January 12, 1980." Agenda,
background of the problem, again the date, secondly
the review of six-month experience, July-December 1980;
thirdly, suggestions for medical nursing staff and
fourthly, recommendations. Right?

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A. Yes.

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Q. Now stopping there and dealing
firstly with the luncheon conference --

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THE COMMISSIONER: Before we go any
further the "see over" at the bottom of that, is that
what appears to be page 58?

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MR. ORTVED: What I have just filed
which is 56A --

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THE COMMISSIONER: 65A.

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MR. ORTVED: 65A.

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THE COMMISSIONER: Should that come in just before page 57 and 58?

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MR. ORTVED: Exactly. It comes before what you have as page 58 in Exhibit 65.

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THE COMMISSIONER: Yes. It comes in between.

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MR. ORTVED: It is the page before page 58.

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THE COMMISSIONER: Yes. All right.

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MR. ORTVED: And if we were to put the package together that was just distributed, the agenda to which I have made reference would be the page preceding 56 - 65A.

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Now the fact that --

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MR. SCOTT: Did Mr. Lamek have that?

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MR. LAMEK: No, I did not.

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MR. SCOTT: Oh, I see. It was overlooked, was it?

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MR. LAMEK: It was not provided to me.

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MR. ORTVED: Q. The fact that the conference took place at a luncheon conference, could you just explain that?

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A. The reason for that is that is usually extremely difficult to get physicians and nurses at either the beginning or end of the day and



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the only reasonable expectation of getting a senior group together like that is over a method where they have to stop to eat, and we were able to accomplish that rather easily.

Q. Are you able to recall the actual duration of that conference?

A. Well, I don't know exactly how long it was, but it was longer than an hour or so. It was probably a couple of hours. Hour and a half or two hours.

Q. I am not going to go through that meeting in detail because Mr. Lamek has already done so with you, but briefly was there discussion about the death experience on Wards 4A/B?

A. Yes.

Q. And again was there any consensus as to the root cause of that unfortunate experience?

A. Well, everybody recognized the fact that they were infant patients and severely affected, and that was a matter that was addressed by the intensivists, the surgeons, ourselves and the nurses.

Q. And again I asked this before but was there any contest of that characterization of the root cause of the problem?



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A. There were several areas that were discussed at great length, and it was agreed that that was - that the problem surrounded the best way of managing the sick baby.

Q. All right. And you have in your minutes filed here as Exhibit No. 65, detailed those suggestions that came out of that meeting? Correct?

A. Yes, I have.

Q. And those are in terms of more operating time and the like?

A. Yes.

Q. And in particular there was another recommendation which is contained in the final paragraph of that minute, namely in terms of exploring this concept of an intermediate ICU. Is that right?

A. Yes, that was preceded by the paragraph that there was a need to increase the number of resident staff.

Q. In terms of the intensivists' input, can you assist us as to what it was in terms of supporting or otherwise this suggestion?

A. Well, the intensivist from the Intensive Care Unit, the person involved was Dr. John Edmonds, the senior member of that group, and he pointed out that the Intensive Care Unit was very



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seriously stretched in terms of its capability of dealing with everything and there were certain reasons why there couldn't be much further expansion of the unit in its existing form.

He was I think in favour of the notion of some intermediate unit of the sort that had been proposed earlier, and he was not worried about whether it should be in existence but rather more where it should be in relation to the wards. Should it be next to the Intensive Care Unit or should it be next to the ward or in the ward, and that was his contribution there.

Q. And dealing with the nursing input to that discussion, are you able to recall the support or otherwise on the part of the nursing representatives present?

A. Yes. The Director of Nursing was very positive in her statement about that, and in fact I virtually used her words to describe their position at that time.

Q. Is that what is found in the next to the last paragraph?

A. Yes. That is the next to last paragraph before recommendations.

They felt rather strongly that the unit



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should be on the ward, and I think by the end of that meeting there was a general agreement about that.

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Q. And the conclusion and

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recommendation was that a committee would be formed to explore that concept?

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A. Yes.

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Q. Dealing with this whole concept,

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was it the item that was going to turn this experience around?

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A. Well, we didn't know that for

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sure, of course. We could only conclude from

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examination of the situation by a number of experienced

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people in the different fields involved that that was

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a reasonable approach to take to perhaps try to turn

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it around.

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We recognized that many of these were

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very sick babies. Some of the babies might not be

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greatly improved by the provision of such a unit, but

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the best chance for all babies would be by putting

such a thing in position.

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Q. So was such a committee as was

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recommended in the last paragraph of that minute

formed?

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A. Yes, it was.

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Q. And who was appointed to it?

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A. I think that Dr. Fowler was appointed to it, and - he is a staff cardiologist who is sort of the administrative ward chief, and he and Mrs. Radojewski and Dr. Edmonds I believe were the people and maybe Dr. Williams as well --

Q. All right.

A. -- one of the surgeons, formed the basic committee that was going to explore what might be done.

Q. Are you able to assist us as to when that committee was appointed?

A. I think the committee was appointed very shortly after that meeting. A few days I think.

Q. Are you aware as to whether it met?

A. Yes, it did meet.

Q. And have you seen and are you able to identify minutes taken, provided by that committee?

A. Yes, I have some. I am not sure I have them all.

Q. I have here a minute you provided to me of a meeting with Dr. Williams, Dr. Edmonds and Mrs. Radojewski for Tuesday, January 20, 1981, over the signature of Dr. Fowler.



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A. Yes.

Q. Do you have that?

A. Yes, I have that.

MR. ORTVED: I will ask that that be the next exhibit, please.

THE COMMISSIONER: That would be Exhibit 136, is it?

Can you help us, Mr. Ortved, how long you think you will be? I was just wondering about a break, that is all.

MR. ORTVED: I still anticipate concluding this afternoon.

THE COMMISSIONER: No, but I just wondered. I thought if you were finishing or expecting to finish in the next 15 or 20 minutes we would carry on.

MR. ORTVED: I can't promise that.

THE COMMISSIONER: I think we will take a break now for 15 minutes.

--- EXHIBIT NO. 136: Minute of Meeting with Dr. Williams, Dr. Edmonds and Mrs. Radojewski, January 20, 1981.

--- Short recess.

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---Upon resuming.

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THE COMMISSIONER: Yes, Mr. Ortved.

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MR. ORTVED: Thank you,

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Mr. Commissioner.

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Q. Now, dealing with the last

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exhibit, Dr. Rowe, the minutes over the signature of

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Dr. Fowler. Have you seen those before?

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A. Yes, I have.

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Q. And where those provided to

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you at or about the date that is indicated in the
title, January 29th, 1981?

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A. Yes.

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Q. And just very briefly on

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those minutes, the first paragraph is:

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"It was decided at the previous meet-

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ing that the unit should be located

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on Ward 4A at Room 418. It is rated

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for 6 infant beds at this time, the

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Intensive Care Unit is planned for

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4 beds."

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Now, it is my understanding that the
first meeting of this Committee took place on January
14th. Are you able to assist me as to that?

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A. I think there was a meeting

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prior to this one, yes, but I don't have the minutes

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of that.

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Q. All right. And this Minute

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details the discussions that ensue concerning the

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personnel and equipment for this intermediate ICU,

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right?

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A. Yes.

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Q. Just dealing with the equip-

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ment, briefly, and I'm not going to read that para-

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graph, but does that mention as planned for the unit

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some of those items of equipment that you have already

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indicated might benefit such a unit and be more

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A. Yes.

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Q. And also in terms of personnel,

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it indicates that it would be necessary to have 10

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nurses for administration and there should be a

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team leader as well. It doesn't go on to say whether

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or not that would be an addition to the complement

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on Wards 4A/B, but what was your understanding in

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that regard?

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A. I think that was the total

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that they had planned and some of the existing nurses

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would be included in that total.

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Q. Were the meetings of the

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Committee followed up with a formal proposal which



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detailed their conclusion and recommendations?

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A. Yes.

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Q. Is that the document which

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I have distributed entitled "Intermediate Intensive

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Care Unit in Wards 4A/B"?

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A. It is.

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Q. Now, do you have a copy of

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that, Dr. Rowe?

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A. I do.

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Q. I have a copy for you,

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Mr. Commissioner, and I have distributed copies I
believe to everyone.

13

THE COMMISSIONER: Exhibit 137.

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---EXHIBIT NO. 137: Document entitled "Intermediate
Intensive Care Unit in Wards
4A/B".

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MR. ORTVED: Thank you.

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Q. That document, going on to

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page 6, Dr. Rowe, is dated 12 March, 1981 over the

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signature of Dr. Fowler, correct?

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A. Yes.

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Q. Did you see it or receive it

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at or about that time?

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A. Yes.

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Q. Now, again, I am not going to

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review that document in its entirety, it speaks for



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itself, but perhaps just very briefly going to the equipment section at page 3 and following. It talks about ECG impression monitors, portable defibrillator, infusion pump. Again, are these things that would not be ordinarily available on the ward?

A. That's right.

Q. And again on page 5 under equipment the pressure transducer, again, something not ordinarily found on the ward?

A. Yes.

Q. Dealing with the section of that recommendation entitled Personnel, Dr. Fowler goes on to spell out in the second paragraph there on page 3 that the extra nurses for the unit would only increase the complement on Ward 4A by seven since there are nurses already assigned to work in this room as a regular patient room.

A. Yes.

Q. However, what he is saying, I take it, is that if in fact the unit is introduced there will be an additional seven nurses for the floor, correct?

A. I think that's the number.

Q. Then just to conclude on this topic, was there in fact a presentation to the,



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what is it called, Program Advisory Committee?

A. Yes.

Q. And who made that?

A. I made that submission in
conjunction with Dr. Trusler.

Q. And is that as was envisaged
in the January 12th meeting as contained in the
recommendation found in the minute of that meeting?

A. Yes.

Q. And are you able to recall
when that presentation took place?

A. I think it was some time in
March. I don't have the exact date.

Q. All right.

A. Maybe it was April; maybe it
was April.

Q. Of what year?

A. I will have to get that
date, I'm sorry, I don't have it.

Q. Of what year?

A. 1981.

Q. And was it based upon the
document which has been filed as Exhibit No. 137?

A. Yes, it is.

Q. And in fact was that unit



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approved?

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A. There was further discussion

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of the unit. There were subsequent examinations by

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the nursing service of additional parts, and I sub-

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mitted an addendum to the proposal which I think

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incorporated the need for additional sub-speciality

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residents on the floor.

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Q. All right.

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A. And that was submitted as an
addendum on April 23rd, 1981.

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Q. All right. Now, do you have

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that with you?

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A. I have it with me.

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Q. Might I see it, please?

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All right. Well, I don't intend
to make any reference to it other than to file it
to complete the picture, Mr. Commissioner.

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THE COMMISSIONER: Yes. Well,
was your proposal written, the one that you put in,
you and Dr. Trusler put in?

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THE WITNESS: We used the proposal
which Dr. Fowler - and we simply presented the
material to the Program Advisory Committee.

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THE COMMISSIONER: So, it is
Exhibit 137 that was presented?

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THE WITNESS: Yes.

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THE COMMISSIONER: Yes, all right.

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MR. ORTVED: Q. And then you have

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produced an addendum which is entitled "The Hospital

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for Sick Children Memorandum" from Richard D. Rowe to

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Mr. L.B. Murray dated April 23, 1981 and the subject

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is "Sub-Speciality Resident in Cardiology - Addendum

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to the --- "

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A. "...to the Request for an

intermediate Intensive Care Unit".

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Q. All right, "Addendum to the

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Request for Intermediate Intensive Care Unit".

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THE WITNESS: Mr. Commissioner, I

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do not have another copy of that, so, we will have

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to Xerox it.

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MR. ORTVED: Well, we will make

a Xerox available to you as well as to the others.

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THE COMMISSIONER: Yes, yes. Well,

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I think what we will do is, we will make it Exhibit

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138 and copies of that will be available on Tuesday.

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You don't need it between now and Tuesday?

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THE WITNESS: No, I don't need it.

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MR. ORTVED: I'm not going to ask

you questions on it.

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THE WITNESS: As long as I have a

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record, that's the only copy I have.

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---EXHIBIT NO. 138:

Memorandum re "Sub-Speciality
in Cardiology - Addendum to
the Request for Intermediate
Intensive Care Unit", dated
April 23, 1981.

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MR. ORTVED: Q. Was this unit

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eventually introduced on to the ward?

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A. Yes, it was.

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Q. And I take it that there were

certain birth pains that were associated?

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A. Yes, there were.

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Q. And in fact it was introduced

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I believe you have told me in November, 1982?

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A. Yes.

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Q. And that involved in part

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the process of approval and in the retraining of the
nurses to staff it.

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A. The hiring and the training

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of nurses. It was particularly the hiring of nurses.

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Q. Hiring due to just the

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unavailability of nursing personnel?

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A. Yes, during that period.

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Q. And in fact has it resulted

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in additional complement of nurses to the ward?

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A. Yes. Yes, it has.

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Q. And is it being utilized for
the purposes envisioned at the meetings that took
place in 1980/1981?

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A. Yes, it is. I feel very
strongly that the addition of the unit has been
helpful. I can't show figures of what it may or
may not have done in terms of survival of patients,
but there is no question that the nurses feel a lot
more comfortable with it, as do the physicians, and
it is working, in my view, very well.

Q. I'm going to leave that
topic and move on to another topic and that is the
chronology of events following upon the Estrella
serum digoxin levels being discovered.

Baby Janice Estrella, as we now well
know, died January 11th, 1981, correct?

A. Yes.

Q. As I understand it, the
serum digoxin level requested in that case is the
first postmortem digoxin level to your knowledge in
the Hospital?

A. I think that is correct.

Q. And when did you become aware
of the level reported of 72 in relation to Janice
Estrella?



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A. I believe that was in the
early part of March, the second week of March.

Q. I just can't recall whether
you did this earlier in your evidence, but how were
you able to fix it as the second week in March of
1981?

A. I think it was when Dr. Fowler
came to me about the result at that time. I cannot
remember the precise date, but his recollection is
also the second week.

MR. OLAH: I'm sorry, I didn't hear
the name of the physician.

THE WITNESS: Dr. Fowler.

MR. ORTVED: Q. When you say
Dr. Fowler came to you, what did he have in hand,
if anything, when he came to you to discuss this
level?

A. He came with a copy that
he had received in the mail of the autopsy report on
this individual.

Q. All right. Now, I'm referring
to the Estrella record and, in particular, page 12
of that record, the last paragraph of that report
which provides as follows:

"Samples of postmortem blood were

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"obtained for assay of digoxin levels.
These samples were contaminated
slightly by edema fluid and ascitic
fluid. The digoxin levels on these
samples measure 72 nanograms per
millilitre (toxic range 2.0 to 9.0
nanograms per millilitre of blood).

This level is markedly elevated
over the normal therapeutic range and
if accurate would explain the death
of the patient."

Now, did you ever review that
paragraph?

A. Yes.

Q. And was it that paragraph
that was the subject matter of a discussion between
yourself and Dr. Fowler in this second week of March,
1981?

A. Yes.

Q. Now, what was the conclusion,
or what was the discussion firstly between yourself
and Dr. Fowler concerning that particular paragraph?

A. Well, the question was whether
anybody, whether either of us had ever encountered
a level of that nature before and what it meant and
whether there was some possibility of error involved
in a value of that magnitude.

What inquiry did either of them make?



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Q. Well dealing firstly with the initial part of that discussion, had you ever encountered such a level before, what was the consensus in that regard?

A. No, we have never, we neither of us have seen a level of that magnitude before, personally.

Q. And then going to the second aspect, your reaction to it, what was it?

A. Well, we both wondered whether it might be some error of a decimal point initially, but the comment about the contamination was the other factor that concerned us.

Q. Just on this point, what is firstly edema fluid?

A. Edema fluid is free fluid within the body between tissues, or in cavities.

Q. And ascitic fluid?

A. That is edema fluid in the abdominal cavity.

Q. And would those respective fluids, either one or both, or in combination, serve as a contaminant?

A. Yes.

Q. Now just on the topic of your



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conclusion that there might be contamination, I am going to read to you a portion of the evidence of Dr. Glen Taylor, given at the Preliminary Hearing before His Honour, Judge Vanek.

MR. OLAH: What volume?

MR. ORTVED: This is Volume No. 17, page No. 111, for February 15th, 1982.

Q. I am going to read to you portions of this and then ask you about your views on certain of these passages. Firstly, page 111, line No. 12:

"Q. Did you take any kind ... "
this is on examination-in-chief by Mr. McGee,
Dr. Rowe.

THE COMMISSIONER: Can you help us,
what volume is it?

MR. ORTVED: Volume 17.

THE COMMISSIONER: This is the
Preliminary Inquiry. You are in luck, you can read
anything you like because nobody can check up on you.

MR. ORTVED: I think Mr. Lamek might --

THE COMMISSIONER: Have you got it?

MR. LAMEK: I will check later.

MR. ORTVED: I promise to read it
accurately.



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"Q. Did you take any kind of a blood sample, or blood samples from Baby Estrella?

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"A. Yes, I did.

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"Q. And where did you take these blood samples from, what part of the baby's body?

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"A. There were two samples. One sample was obtained from blood milked from leg veins.

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"THE COURT: Q. Where?

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"A. The leg veins and the second sample was obtained from blood and fluid in the pelvic cavity of the body."

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Just stopping there. The business of milking leg veins, maybe you should just describe for us what is being spoken of there?

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A. Well, I am not sure, because I wasn't there while he was collecting it of course. But milking the leg veins would be that he would presumably be massaging the leg in some way to extract what blood, or fluid was left in the system.

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Q. Again onto page 112, commencing at line 12:

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"Q. All right, I am showing you - well, first of all, the procedure in taking



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"samples, when you take them what do you do with them?

"A. Under normal circumstances they are taken in the autopsy suite and I obtain the specimens, usually label the tubes appropriately and give the tubes to the autopsy assistant who then fills out a requisition and delivers the specimen with requisition to the chemistry laboratory.

"Q. All right. Do you know who the autopsy assistant was on the Estrella baby's case?

"A. Yes.

"Q. Who was that?

"A. It was Mrs. Djokic, D-j-o-k-i-c.

"Q. Mrs. Djokic. All right. Was that the procedure you followed in that case?

"A. Not in this case, no.

"Q. Not in that case?

"A. Not in that case.

"Q. What happened in that case, the Estrella case?

"A. I forgot to obtain the specimens



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page 113:

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"durkng the usual course of the autopsy and I had to go back to the morgue, which is in the basement below the autopsy suite and open the body and obtain the specimens.

"Q. All right. How were you able to identify the body when you went back to the morgue to do that?

"A. Identify the body by ID bracelet and by facial features.

"Q. All right. Was it the same body that you had performed the autopsy on earlier?

"A. Yes.

"Q. How much earlier had you done the autopsy?

"A. I think it was about 30 minutes between finishing the autopsy and remembering I forgot to take the specimens."

Then going down to page, the bottom of

"Q. All right, so you obtained one sample from the leg and one from the cavity below the stomach?



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"A. Yes.

"Q. Would either of those exhibits be contaminated in any way to your knowledge?

"A. Yes. The pelvic sample was most likely contaminated with edema fluid from the tissues and from ascites fluid in the cavity itself.

"Q. All right, and when you say contaminated, I use the phrase contaminated, would that mean diluted or what?

"A. The blood would be diluted by these fluids, yes.

"Q. Diluted by the fluids?

"A. Yes."

Now he goes on and at page 119 there is this exchange:

"Q. I see. All right. Well, did you formulate an opinion as to the cause of death of Janice Estrella?

"A. My initial opinion was that she died as a result of congenital heart failure and pneumonia. Subsequently with a discussion with Dr. Manser

Did they ask for it? Fowler say: ask!



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"concerning the digoxin level it was decided that if that was an accurate level that the digoxin level was sufficient to account for her death."

And I won't read further, but I can indicate to the Commission that it would appear from this transcript that the sample taken from the pelvic cavity, the gutter blood, was the sample that generated the value of 72 and it was the sample milked from the leg vein that gave a subsequent analysis of greater than 4.7. Now the record will confirm the matter in that regard, I believe, Mr. Commissioner.

Having regard to that background, you have indicated to the Commissioner that your reaction upon reading that report of Dr. Manser's was that there was most likely an error in the sample as a result of contamination, is that fair?

A. Yes, I think so.

Q. Pardon me?

A. We wanted to have further confirmation than was available at that particular moment.

Q. All right. But as of that point in time was that your impression?

A. That was a strong feeling we had then, yes.



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Q And I know we are now dealing with after acquired knowledge, but having regard to that knowledge, in fact having regard to the description given by Dr. Taylor as to the mode of obtaining those two respective samples, what is your view now as to whether or not those would have been contaminated?

MR. LAMEK: I am sorry, those would have been contaminated?

MR. ORTVED: Yes.

MR. LAMEK: I thought the evidence you read referred to the contamination of one sample, and that is the only one that Dr. Rowe was aware of in chief anyway.

MR. ORTVED: All right, let me deal then firstly ---

MR. LAMEK: I showed you the second one and until then you had not been aware of it.

MR. SCOTT: Counsel shouldn't directly deal with the witness in that fashion, you should make submissions to the Commissioner rather than to the witness.

MR. LAMEK: Mr. Scott is entirely right and I apologize.

MR. ORTVED: I am going to deal with Mr. Lamek's question as a matter of fact, Mr. Chairman.



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THE COMMISSIONER: The post mortem did indicate that there was samples that were contaminated.

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MR. ORTVED: That is right.

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THE COMMISSIONER: I am not too sure I know what contamination means. Contaminated obviously means it is contaminated by other - I don't know how this affects, and I am not at all sure that Dr. Rowe knows how it affects the reading.

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MR. ORTVED: No, and he may not, but I suppose we will find out shortly.

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THE COMMISSIONER: All right. What, we are lost now, what was the question?

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MR. ORTVED: I will rephrase it.

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THE COMMISSIONER: All right.

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MR. ORTVED: Q And I am content to deal with them individually. Dealing then firstly with the sample obtained from the pelvic cavity, the sample that in his evidence Dr. Taylor indicated was contaminated with edema and ascites fluid.

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A. Yes.

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Q Dealing with that sample alone, what is your view, if you have one, as to whether or not that would contaminate the sample?

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A. That would contain, that is really

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the equivalent of having tissue in the sample and
therefore could contain much higher levels of digoxin
than in blood alone.

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Q. And dealing with the second
sample which Dr. Taylor indicated he took, the sample
milked from the leg vein, do you have a view as to
whether or not that sample would be contaminated?

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A. Well, I didn't have, I didn't
have a view at the time, but I now appreciate that if
you were to do something like that you might massage
material from outside the system into that system.

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And just in the same way that cardiac massage we know can induce increased levels in cardiac samples we could expect the same in the peripheral blood.

Now I am not an expert in that area and I have said before that that is something that a pharmacologist is more able to answer than I am.

Q. Certainly.

A. But I would be pretty suspicious on the basis of present knowledge about those two samples.

Q. All right.

Now in his questions of you, and I refer specifically to page 2717 of Volume 16 of July 26 --

THE COMMISSIONER: The page again, please?

MR. ORTVED: 2717, Mr. Commissioner.

Q. You were asked this question by Mr. Lamek:

"Q. If you had seen the additional sample of greater than 4.7 taken from a separate vein source?"

Maybe I should go back and put it in context. I suppose I should go back one question to 2716 to put it in context, Mr. Commissioner.



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At the bottom of 2716:

"Q. Now, Doctor, I can appreciate that seeing a level of 72 nanograms in the autopsy report in that way would indeed have stretched your credulity. I can understand that.

May I ask you this: if you were to see a level of 72 nanograms and in an accompanying sample, but separate sample, a level of greater than 4.7 higher than the last measured level in the child, and after four days of no administration of the drug, would that have lessened your incredulity?"

"A. If I had seen one in --"

"Q. If you had seen the additional sample of greater than 4.7 taken from a separate vein source?"

And your answer is:

"Well, it would depend upon the vein source. I think if there is any possibility that that was contaminated too, then that might make some difference.

But at any rate I think that

Cf p 3883 supra "night" happen.

His confidence in his thesis grows from
moment to moment!



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would suggest - although we don't know what 4.7 is, I agree because it doesn't say."

"Q. We don't know how high --"

"A. -- how high it would go."

Now dealing firstly with Mr. Lamek's question to you, "If you had seen the additional sample of greater than 4.7 taken from a separate vein source?", what is your view now having regard to what you heard read to you from Dr. Taylor's evidence at the preliminary inquiry as to whether or not this second sample can be called a truly venous sample of blood?

A. I don't think it can be.

Q. And having heard what Dr. Taylor said at the preliminary inquiry, what is your view now as to your answer in terms of whether there is any possibility that that was contaminated?

A. I think it probably was.

Q. Having regard then to your perception now based on what you know now - I appreciate it being more than what you knew when you first saw the report of Dr. Manser - but having regard to what you know now, had you known all of that back in March of 1981, what do you say, and I will use Mr. Scott's



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question, what do you say as to whether that would have provided any evidence that you could have relied on in terms of digoxin being a cause of death?

A. You couldn't have relied on it.

MR. SHINEHOFT: Could the witness please repeat that answer.

THE WITNESS: You could not have relied upon it.

MR. SHINEHOFT: Thank you.

MR. ORTVED: Q. We know from your telling us that you didn't ^{re}perceive this result until some time in March, the second week in March you say, and there has been some question raised as to the alacrity with which these reports reach referring physicians. But having regard to your reaction to that report when you did receive it, would it have made a difference if you had received it earlier?

A. No.

Q. If I could just move on to the question of Baby Pacsai.

Pacsai we know died March 12, 1981 and it has been amply demonstrated in the evidence that there was an ante mortem serum digoxin level for that child which eventually came to be 25; is that right?



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A. In that region. I can't remember exactly.

MR. SHINEHOFT: I may be able to help, Mr. Commissioner. It is my understanding it was greater than 10 and the post mortem sample was 25.

MR. ORTVED: Thank you, Mr. Shinehoft.

Q. In any event are you able to assist us as to when you came into possession of information that the levels in relation to Baby Pacsai were elevated, substantially elevated?

A. I learned that on the Wednesday following the death, which would be the 18th.

Q. 18th of March?

A. I think that is the date.

Q. And you have told us in your evidence-in-chief that you are able to fix that date by a reference to the memorandum of Dr. Carver; is that right?

THE COMMISSIONER: Is that date the 18th of March?

THE WITNESS: That is the 18th of March.

MR. ORTVED: Q. Now can you just refresh my memory as to how you came to know and in



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what context you came to know of that elevated level?

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A. Dr. Carver, the Head of
Pediatrics, was informed of that level by Dr. Costigan,
the Chief Resident, and he called Dr. Fowler and my-
self together and informed us of that result and asked
that we undertake certain actions, the first of which
was to call the Coroner again, who had been notified
at the time of death, to let him know that result and
ask him what further -- what his further wishes were,
and Dr. Fowler was the person who performed that task.

Then we were requested to look into
the aspects of how that level may have arisen, parti-
cularly with regard to the administration and the
nature of the digoxin solution that were applicable
on the ward, and those were the requests that were made
of us on that day.

Q. And this is what day?

A. This is Wednesday, the 18th
of March.

Q. What were the views of yourself,
firstly, in relation to how that elevated level may
have been obtained?

A. Well, we felt at the time that
must be a misadministration of the drug.

Q. Did you have any views as to



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how that misadministration had come about?

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A. We thought it could be
accidental or it might even be intentional.

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Q. In terms of your, if we can
use the expression, index of suspicion at the time,
did you favour one or the other of those possibilities?

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A. Well, we first looked at
the question of accidental. That was the first
approach to those two possibilities.

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Q. Because I don't know whether
it has been asked, did you or Dr. Fowler, with whom
I understand you discussed the case, make any connection
between that level and the level you had seen in
relation to Estrella?

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A. No, we didn't.

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Q. And in terms of communications
with the Coroner did you have any --

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A. No.

Q. -- at this time in relation
to Baby Pacsai?

A. No, this was being handled
by Dr. Fowler who originally reported the patient,
the case, to the Coroner.

Q. All right. In terms of the
views you had as to how this child had come by its



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elevated level and the action being taken, what are you saying as to whether that was communicated to the Coroner?

A. I don't know what was directly communicated to the Coroner except I believe Dr. Fowler said to me that the Coroner had suggested in response to a question we had about whether the family should be informed at that stage about this, I believe his response was that until the matter was clarified further there should be no comment.

Q. All right.

A. So I don't know what Dr. Fowler specifically said about which he thought was the more likely possibility.

Q. All right.

And then I don't think it is any problem leading in respect of what was done by Dr. Fowler because we have a memorandum in that regard that has been filed as Exhibit 110, which details his investigations; is that correct?

A. Yes.

Q. That investigation was along the lines of what had been done, what had been prescribed for the child, whether there had been any error in the dose given, whether the concentrations of



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digoxin were as advertized; correct?

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A. Yes.

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THE COMMISSIONER: What do you

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think?

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MR. ORTVED: I'm almost finished.

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There are some small matters of housekeeping that will
take ten minutes which I may be able to finish off
on Tuesday morning.

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THE COMMISSIONER: All right. Fine.

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MR. ORTVED: Let me ask three or

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four more questions and I will leave it until Tuesday
morning, Mr. Commissioner.

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Q. Then, when was Dr. Fowler's

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report or investigation and report back concluded?

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A. That was concluded on

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Friday, I believe.

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Q. That would be the 20th?

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A. Yes.

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Q. And what is the next develop-

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ment in terms of the chronology of events so far as
you were concerned, Dr. Rowe?

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A. The next that I learned about

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that was on Saturday, the 21st, when I had come in to
the Hospital to engage in a quiet morning's dictation
and catching up.

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I was informed that there was a
meeting called by the Coroner, by the Acting Chief
Coroner, in his office in the Coroner's building, and
that it concerned the matter of Pacsai and Estrella.

Q. All right.

Then up to this point in time had
the connection between Pacsai and Estrella occurred
to you?

A. There hadn't -- I hadn't
thought of it in that way but when those two came
together on that day, obviously I had to think again.

Q. And just if you could try
and recreate for us your index of suspicion or your
perception at the time as to accidental versus
intentional. Was that altered by the impressing
upon you of the connection or the possible connection
between Estrella and Pacsai?

A. Yes.



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Q. And that was on Saturday the
21st?

A. Yes.

MR. ORTVED: Okay. Then, Mr.
Commissioner, I have some housekeeping to take care of,
but I'm perfectly content to do that on Tuesday morning.
I won't be very long.

THE COMMISSIONER: We will do that on
Tuesday.

MR. LAMEK: Mr. Commissioner, could we
deal with perhaps one other thing and that is the
following order of cross-examination for next week.
I think Counsel might find that helpful.

THE COMMISSIONER: Well, I don't
know what you and Mr. Sopinka want to work out but I
think you have now got priority if you want to keep it.

MR. STRATHY: I'm quite happy this
one time; at least I'm ready to do it.

THE COMMISSIONER: And probably he will
be next. Mr. Hunt, you or someone will be after that.
This is always subject to some other arrangement people
want to make. We will follow then I guess with Mr.
Percival.

MR. OLAH: I think, Mr. Commissioner,
I should point out something in Mr. Mannings absence,



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2 I think he was indicating he has to be in Quebec for
3 the Bar Association meeting, so, he will probably
4 want to seek some sort of assistance from you
5 in that regard.

6 THE COMMISSIONER: Well, he hasn't
7 I take it been able to arrange anything with anyone
8 else, is that the case?

9 MR. OLAH: I don't know, but I know
10 that somewhere along the line he will want to ---

11 THE COMMISSIONER: When is the Bar
12 Association anyway?

13 MR. LOAH: I'm not sure at what point
14 he has to leave but I know he has to be in Quebec
15 City, so, I thought I would just bring that to your
16 attention.

17 THE COMMISSIONER: Well, subject to
18 what Mr. Manning has to say.

19 MR. SHINEHOFT: I understand, Mr.
20 Commissioner, that it is Counsel for the parents
21 who will be examining last, is that correct?

22 THE COMMISSIONER: Well, that is the
23 ordinary rule, yes.

24 MR. SHINEHOFT: Well, I was jammed
25 in between before, but now that I have been moved
back to my proper place I assume that I will be



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conducting my cross-examination at the same time
as my friend.

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THE COMMISSIONER: Not at the same
time, one or the other!

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MR. SHINEHOFT: Yes.

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THE COMMISSIONER: But I will just
take it whatever way you have seated yourselves as
the order you want to proceed and if I see two of you
sitting in the same chair then I know we will have
a problem.

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MR. SCOTT: Mr. Commissioner, those
of us who have finished our cross-examination, Mr.
Lamek and I, we are both concerned about the inordinate
length of time that this exercise is taking.

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MR. YOUNG: Mr. Commissioner, just so
I am clear, I understand Mr. Strathy will be beginning?

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THE COMMISSIONER: I think he will be
beginning. It looks as though Mr. Strathy and
Mr. Sopinka and Mr. Hunt and then Mr. Percival.

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MR. YOUNG: Thank you very much.

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THE COMMISSIONER: I don't know how
long they will be but I would be certainly very
surprised if you come on on Tuesday.

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MR. YOUNG: No, I would expect it would
be late next week at the earliest.

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2 THE COMMISSIONER: And then we will
3 follow with, I guess in the ordinary way, and that is
4 the nurses and the nurses assistants followed by the
5 parents, unless you want to make some other arrangement.

6 Have I left somebody out?

7 No. I have left two out, I have left
8 out the other two of the Trayner team. Well, they go
9 first and then wherever I find you seated we will do
10 that subject to what Mr. Manning says.

11 MR. STRATHY: Maybe after all of that
12 is done Dr. Rowe can test us on our cardiac knowledge.

13 THE COMMISSIONER: Yes, I'm sure we
14 might do fairly well.

15 --- Whereupon the hearing adjourned until Tuesday,
16 August 23rd, 1983 at 10:00 am.
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